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HOW TO FISH

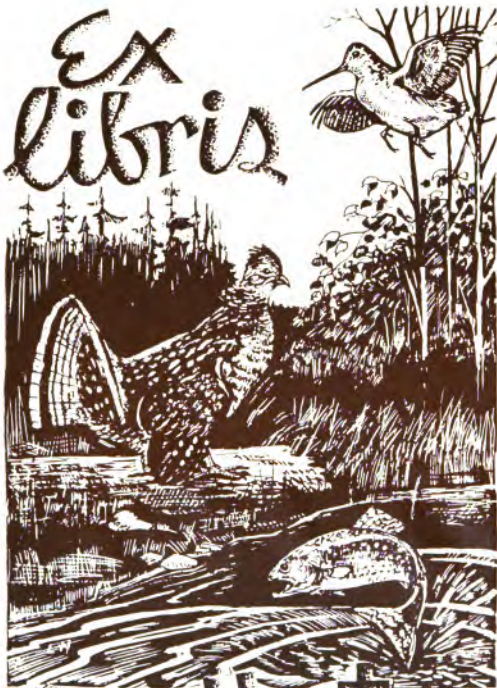


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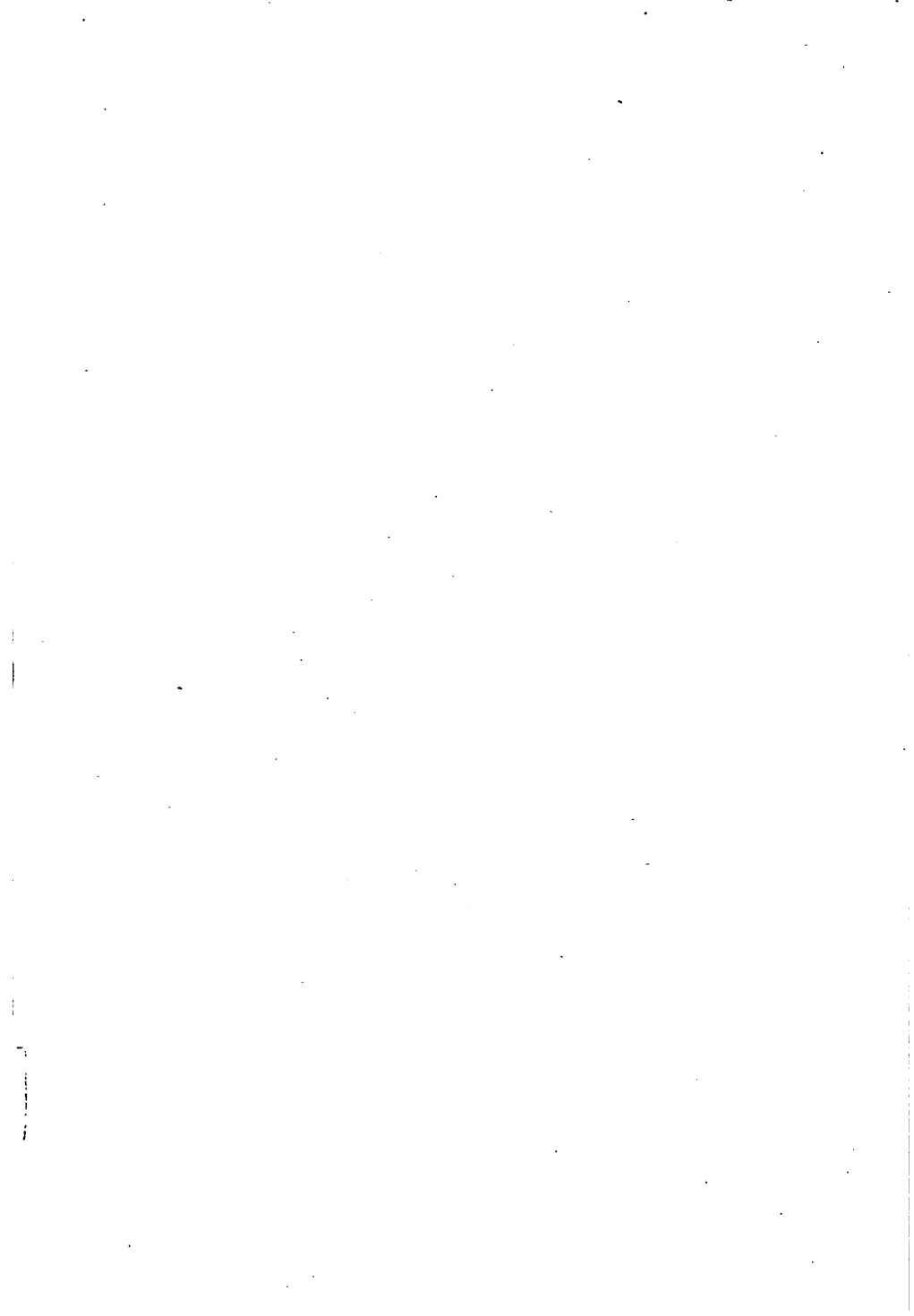
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SALMON FISHING

WITH A FRONTISPIECE BY JOSEPH FARQUHARSON, A.R.A., A FACSIMILE IN COLOURS OF A MODEL SET OF FLIES FOR SCOTLAND, IRELAND, ENGLAND AND WALES, ILLUSTRATIONS OF ANGLING SCENES CHARACTERISTIC OF THESE PARTS OF THE UNITED KINGDOM, AND PICTURES OF SALMON PASSES.

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WHAT SOMETIMES HAPPENS.

Arthur D. Nicholson . 1907.

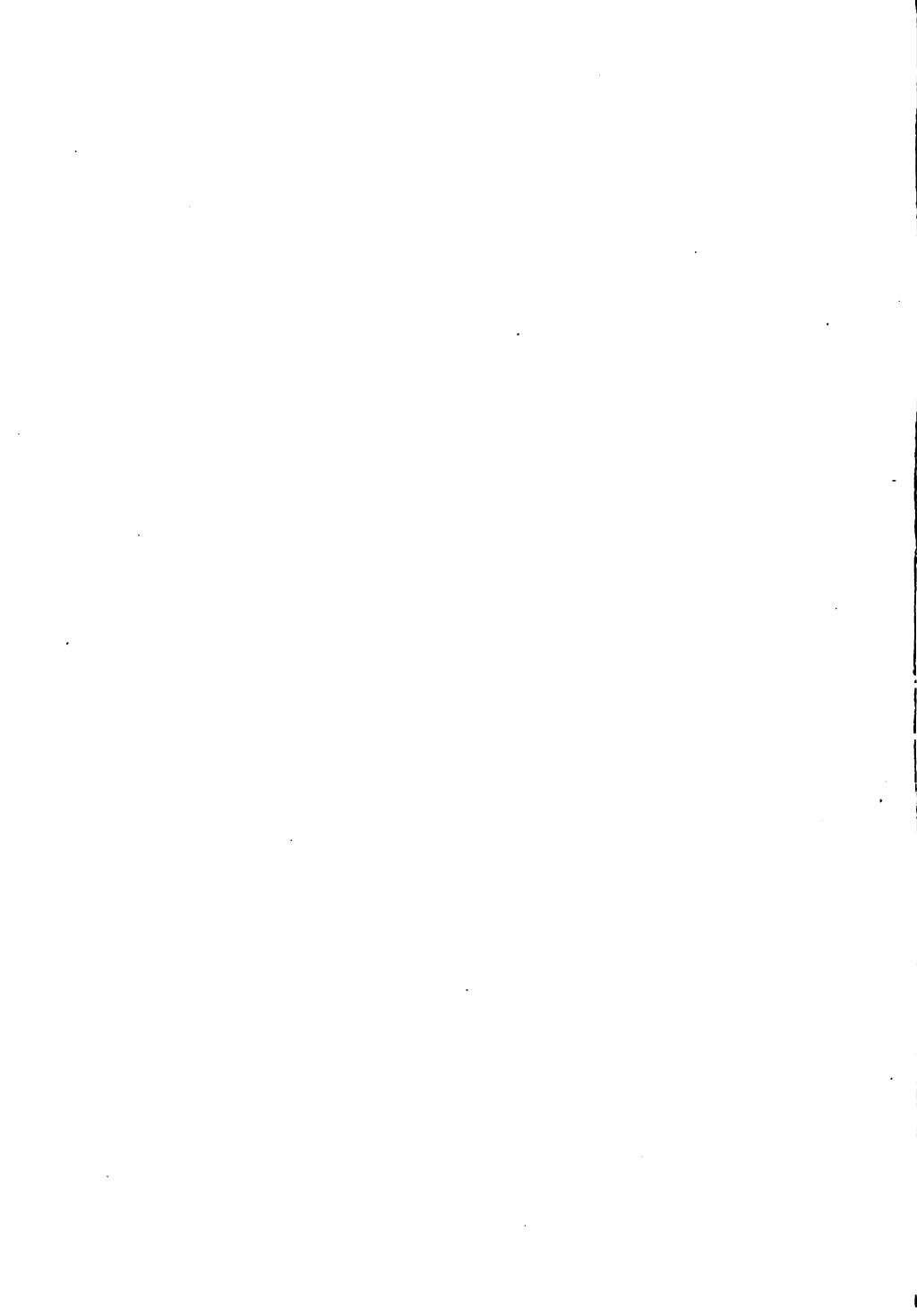
HOW TO FISH

A TREATISE ON TROUT & TROUT-FISHERS

BY
W. ^{Nicholson} EARL HODGSON
AUTHOR OF 'TROUT FISHING' AND 'SALMON FISHING'

WITH EIGHT FULL-PAGE ILLUSTRATIONS FROM PHOTOGRAPHS
AND EIGHTEEN SMALLER ENGRAVINGS IN THE TEXT

LONDON
ADAM AND CHARLES BLACK
1907



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TO
THOMAS J. BARRATT, Esq., D.L.
IN BRIGHT REMEMBRANCE
OF
THREE SEASONS ON A HAMPSHIRE STREAM

Spring 1907.

M852837

PREFATORY NOTE

MR. ADAM BLACK, whom I met in the Highlands last August, then told me that "Trout Fishing" left a widespread want unsatisfied. In all parts of the country the travelling representative of his firm, Mr. Cannon, found that the book, though generously received when first published, in 1904, and still in demand, met the case of those only who already knew a good deal about the subject. There was he himself, Mr. Black, on his way to Loch Tay, to try for a trout: the book had not taught him all he needed to know! An exhaustive treatise was required; and it should be ready for issue in Spring. This was a shocking speech; but gradually, as I thought it over, wrath dissolved before a perception that it was not unreasonable. Any one who discourses on a subject with

which he is familiar was certainly apt, I realised, to assume that the prospective readers knew much more than they did know. That oversight, apparently, played its negative part in "Trout Fishing." Yes: I would write the exhaustive treatise. Here it is. A few theories which I have had the honour of stating in articles contributed to periodicals, including "The Times," "The Nineteenth Century," "The National Review," and "The Monthly Review," are, with permissions, presented in it; but, of course, they are presented in fresh words, in their natural relations, and modified by such criticisms as were unmistakably true. The sum-total of the theories mentioned is a very small part of the volume, which I have sought to make completely comprehensive. Next time the Publisher returns from trout-fishing with his spirits less light than his creel, he will have himself, not me, to blame.

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HOW TO FISH

CHAPTER I

THE TROUT

Early in the Year—Where are they?—From South to North
—A Yorkshire Belief—Another Surmise—A Well-in-
formed Gipsy—Fish that are “in condition” all the Year
—The Pools become Alive—Gregarious Habits—Daily
Movements—In Gentle Flood—Mysterious Disappear-
ance—Eddies—Slack Water—A Singular Pool—Strange
Uniformity of Size—In Indian File—“Rising Short”—
The Explanation—In Raging Flood.

IN the South of England, as White of Selborne noticed, trout “begin to rise” shortly after the middle of March. This implies that they have returned to the places in which they were during the summer before. In autumn, when running up the waters to the spawning-grounds, they would take worms greedily, if these were offered, and would even rise at flies, real or artificial; but, as any honest poacher could vouch, they do not rise freely at flies,

or bite eagerly at more substantial baits, when on the way back to the places which they occupy in spring and summer. Indeed, their habits for four or five months after spawning are mysterious. Even in Hampshire, the streams of which are not so large as to render a pretty exhaustive search impossible, any person not highly skilled in the lore of the naturalist would be puzzled if he went forth to catch a few before the middle of March. He might cast his flies in vain over some attractive stretch on which early in summer he was wont to make heavy baskets. Then, if he had curiosity, he might peer into the water to see whether the fish were there, and find that they were not. He would almost be disposed to conclude that the trout had quitted the stream.

If that evening, or next day, he went to study the problem by the banks of one of the great running waters in Scotland, the mystery would deepen. During the whole of March there seems to be scarcely a trout in such a river as the Dee or the Tay. The persevering salmon-fisher sees a rising trout only now and then; neither with a fly nor with a minnow does the trout-fisher meet with a success worth mentioning. There is no sign of trout in some places where they were plentiful six months before. They have long left the spawning-grounds, and they do not seem to be anywhere else.

Where are they ?

One might be tempted to suspect that they must be hibernating in the mud. A Yorkshireman, at any rate, might make that conjecture readily. In his part of the country a great wonder is sometimes witnessed. There is a long drought, and the becks cease to run, and it may be supposed that all the trout have perished ; but the rains descend, and the floods come, and lo, the trout are back and as blithe as ever. A similar marvel has been noted in Hertfordshire. It is supposed, by way of explanation, that trout are able to remain alive in fluid mud.

That, however, is not the solution I would propose. It is not in the mud that the trout, either of the Test or of the Tay, hide until March is nearly over. They are, I think, resting at the bottom of the river in places where the water is deep and slow. This surmise springs less from experience than from analogy. Both in Hampshire and in the Highlands, during March, I have fished in such pools, as well as in shallow waters, and that in vain ; but any one who seeks the March trout in a lake, instead of seeking him in a stream, will have a different requital. All along the north shore, where the sun is warming the lake, the fish will rush at his flies. Before the enactment of a close-time, a few years ago, many a basket of trout was taken from the Scotch lakes in

February, and the capture of fish in January was not unknown. Perhaps our analogy will commend itself. Lake trout return to the still water very soon after spawning, in the streams. It is reasonable, therefore, to suppose that river trout, most of which spawn in tributaries, seek, on returning, those parts of the river in which the process of recuperation is least arduous. The fact that the river trout do not rise, while the lake trout do, is not against this suggestion. The water near the shore of a lake is shallow as a rule, and the fish there are quick to see a fly thrown over them; but the pools in which the river trout take refuge are the deepest they can find, and the fly may well pass unnoticed.

Why, then, it may be asked, does any poacher seek them earlier in the year than the law allows? If trout are not to be caught, why does such a practical person go forth to try for them? Why, indeed, does the writer himself, not yet convicted of having poached, show a certain intimacy with the ways of trout at a time when they are not to be caught? These are cogent queries. The last of them may be settled by the remark that, although many trout are not to be expected from a large river in March, the law does not forbid angling then. The others must be answered reflectively.

Flowing into the North Sea on the coast of

Scotland there is a fine trout-stream on which the burgesses of a county town have, by an ancient statute, the privilege of angling. When there was no close-time this right was exercised liberally. Many of the beneficiaries fished not only through spring and summer but also through autumn and winter. The burgesses seemed to include school-boys, some of whom spent Saturdays and other holidays by the waterside. There, late in November, I met a familiar figure. It was that of an ancient gipsy who haunted the stream night and day. It was believed that he made his livelihood by selling trout to a fishmonger in a large town not far off, the inhabitants of which, not being more learned in the ways of Nature than most people are, took it for granted that, if not stale, any fish were good to eat. The gipsy was an approachable man; and, having heard my elders and betters say that it was a shame to fish after September, and that the stream was being ruined, I ventured a shy remonstrance in the considerate form of a request for knowledge. Was it really true that trout were not all right at that time of the year? "Most of them are not," the gipsy answered; "but some of them are. In this water, all winter, there are aye trout of a kind that don't spawn. Not very many o' them; but they're here, and they're just as good at Christmas

as at Whitsunday." The old man's quiet words and thoughtful black eyes seemed to be charged with generations of weird wisdom. They set me thinking; and, perhaps to justify dissent from the doctrine of the elders, whose pragmatic conservatism was distasteful, mentally I framed a proposition. "It is wrong to catch trout that are spawning or about to spawn. All trout in that state are in the tributaries. Therefore, it cannot be wrong to fish in the main stream at this time, because the trout in that state are not there." Here, for the moment, the reasoning stopped. It did not reach the corollary that if the gipsy caught any trout they must be trout that were not in the usual run and therefore not out of condition. Perhaps that was because, as he had none in his basket and was not getting a bite, I may not really have believed his legend of the strange fish. Since then the youthful logic has been justified as regards the brief period during which the general run of trout are away from the main streams, spawning. Towards the close of March 1904 I caught two trout. One weighed 1 lb. 3 oz.; the other, $\frac{3}{4}$ lb. A lady had used the landing-net, and, of course, I left the fish at her house. Next day she told me that roe had been found in both of them, and that she had kept it in a phial of spirits. Roe in trout at

that time of the year! I went to see. The eggs were small; but they were unmistakable. If the fish had been rainbows, which spawn five or six months later than the British trout, there would have been less cause for astonishment; but they were undoubtedly brown-trout. The matter seemed to demand an explanation from *The Field*. Fearing that if I myself made inquiry I might display ignorance, I persuaded the lady to write a letter, and to despatch it, together with the phial, to the Editor. What was the meaning of brown-trout with roe in March? The authoritative answer ran: "It is uncommon, but not unknown. One theory is that there are trout which spawn biennially." We had actually, on an afternoon, caught two of the peculiar trout which years before, with the omniscience of old age at thirteen, I had dismissed from mind as being a gipsy superstition!

Soon after March the basket begins to contain, as a daily matter of course, trout of the ordinary kind. One day there will be a brace; the next, a brace and a half; one fish, or none, a day or two later; and suddenly as many as the creel can hold. Resembling most of the processes of Nature, the return of the trout to the quarters of spring and summer is gradual. The fish appear in the pools as if they were ghosts of themselves, stealthily, singly; but at length the pools

are alive with them, just as the woodlands are filled with the notes of the wandering cuckoo, which has come not in flocks but in solitude. Nature is at once individualistic and social. Her social tendencies in a trout-stream are manifest in the gregariousness of the fish. Trout, it is true, do not move from place to place, as char constantly do, in shoals, which are here to-day and may be far away to-morrow; but within a narrower range they show what seems to be a liking for the company of their own kind. Apart from waters that have very few, it is unusual to see a solitary trout. Where one is, in a well-stocked stream, you will, as a rule, find many, and a stretch of water that is deserted by most will soon be deserted by all. It may be suggested that in either case the cause is some influence acting on the trout singly. Here, for example, food may be abundant, or the water flowing at a pleasant pace; while there food may be sparse, or the flow uncomfortable. May not that explain peculiarities in the distribution of the trout? It may; but I do not think it does. Sometimes, though not often, trout quit a place, long a favourite haunt, which has not undergone any discoverable change; sometimes, also, they surprise you in a reach where for many seasons not one was to be found. This variableness is rare in small streams, where, if the stock be large, space is insufficient; but

it is common where there is no danger of overcrowding. On a great river, indeed, every observant fisherman must have found cause for believing that in certain respects our understanding of the ways of trout is far from being complete. One stretch, as far as he can tell, is without a fish, while the next has many; and, judging in the light of what he took to be knowledge gained on humbler waters, he perceives the one phenomenon to be as puzzling as the other. It is certain, however, that trout are gregarious. Their habit in this respect, which may be due either to sociality or to stress of circumstances imperfectly realised by us, will, oddly, be more manifest when we come to observe, as we shall soon, their individualistic ways.

At present it is to be noted that when trout have taken up their positions for the season they do not wander far. It is possible to define their movements with rough accuracy. Sometimes you come upon a pool which is gradually shallowing towards the lower end, and then issues, perhaps by a narrow channel, into rough rapids. Over all that region there is a regular movement of trout during each twenty-four hours within the season of their highest vigour. In the broad light of day there will be some in the deep parts of the pool, some in the rapids, few or none in the shallows between. At nightfall and until after dawn it is on the shallows that the angler's best

chance lies. Some fish have crept into them from below, and others have dropped into them from above. In places where there is no resort of the kind described some of the trout, in the dusk, tend to come into bays or shallows by the side of the stream; and the angler, beginning an all-night effort at midsummer, or not long before or after, may, at such a place, find a fly seized when he is only putting out the line. Trout in a lake have a similar habit. Not all of them take to the shallows or the bays at nightfall; but many of them do.

Such, I think, are the regular daily movements of trout, throughout the period of their highest lustiness, in fine weather. They tend to be in the deeps or the rapids, if there be such places near, by day, and to be in the shallows or the bays at night. In time of flood they are stirred to farther travel. Some, it is true, seek shelter, or a feast, not far from their regular hovers, and often a good fish is to be caught in the lee of anything abutting at the bank, even if it be only a clump of reeds, or over a gravel mound on which you stood dry-shod the day before; but many run upstream until they find a place where the whole water is shallow, and stay there until the flood is nearly spent. At such a time the wise fisherman will give a chance to places over which he does not think of casting when the stream is at summer

level. A stretch such as that is pleasantly in mind. It is a smooth, broad shallow on one of our great rivers. The bottom being of pebbles and bright sand, everything considerable in it can be seen from the banks. It has small fish, many of them parrs; but it has not any trout worth taking. At ordinary times it is one of the reaches which are mysteriously shunned. Nevertheless, during each flood in the summer of 1906 it yielded heavier baskets than any stretch for two miles above it or below. When the river fell to the usual level all the large trout uncaptured, which must have been many, were gone. The mystery would not be solved by a suggestion that at ordinary times the water of this reach is too shallow. It is not extremely shallow. Hardly any part is less than a foot deep, and most of it is deeper. It is just such a bit of water as in many another river, and even in the same river, is a favourite haunt of the trout.

At least one set of places which are generally supposed to be favourite haunts are not haunts at all. These are eddies. They are strangely attractive. They fascinate. In nearly all books on angling we are told not to pass them by untried. It would be possible to fill a chapter with quoted injunctions to that effect. One can understand why eddies are so alluring. Usually they are deep, and usually you

cannot see to the bottom of them ; they are just the places where trout, probably big ones, might be expected to lurk. The facts of the case are not according to expectation. I have cast into many eddies, and have never taken a trout from any of them. None of them has ever yielded a rise. Indeed, eddies, I think, are the only specifiable places in a stream where trout are not to be caught. The fish would be drowned if they stayed there. Whatever position they took up, water would enter their gills from behind and suffocate them. Perhaps, however, the writers who dwell upon the engaging possibilities of an eddy do not really mean an eddy. They may be a little loose in their language. Eddies, after all, are not very common. There are a good many in large rivers, near the banks, at places where the free flow of the water is impeded, and there are some in small streams when a flood has come ; but an eddy in the middle of a river or of a stream is rare. The water behind a large stone in mid-stream is not eddying. It is nearly still. That is why it often holds a fish. It is a restful place. Flies are just as likely to alight there as anywhere else, and it is easy for the trout to snap up those which come down the flow on either side. Perhaps it is places such as that which the writers have in mind when they speak of eddies.

Real eddies, whirlpools, are, as has been said, to be found in large rivers. Suddenly the stream, after a straight run, turns; then you will see a series of eddies near the bank towards which the water is beating; and beside the other bank there will be a bit of slack water, probably moving backwards. Places such as that are very interesting to the fisherman. Not a trout is to be found in any of the whirlpools; but sometimes there are many lying in the quick water just beyond the verge of them. At certain times of the year, when aquatic insects are much sought after, you may see them rising briskly. Sometimes they are a little beyond the reach of your fly-cast. That is tantalising; but it may not be necessary to despair. If you wait and watch, you may find that the whirlpool yields a little to the rush of the main stream, and that while it is in retreat the trout come nearer to the bank. About a hundred yards west of the railway bridge across the Tay between Dalguise and Guay there is a whirlpool such as I am endeavouring to describe. When first I came upon it there were about a dozen large trout just beyond the outmost rim, rising greedily. I threw the fly as well as I could; again, and again, and again I threw; but it never fell within two feet of the nearest trout. Then suddenly, without my having given more line, and with no exceptional help from the wind,

the fly fell into the thick of the rises! A two-pounder was hooked instantly, and landed within ten minutes. When I returned to try for another, again the rises were out of reach. The fly fell about two feet short. Ere long, however, it suddenly fell all right, just as before, and another good fish was played into the landing-net. This went on until the night closed in. Long before then I had found the explanation. In the constant conflict between the eddy and the main flow there was a rhythmical ebb and expansion of the pool. Periodically the main flow gained a few feet against the eddy, and brought the trout with it, nearer.

The bit of slack water on the other side of the river at such a place is always inviting; but often it is a disappointment. If it is not moving backwards it may hold trout, especially in spring, when the fish are not strong enough to stay in the rapids, or in times of flood at the height of the season; but one does not often find a fish if the water is moving backwards. Only, it is well to try just where the backwash strikes against the flow. Sometimes you will raise a fish there.

Certain bits of water, we have noted, are particularly good without any evident reason. About half a mile above the whirlpool just described, the Tay, which has been running to the south-east, turns

a point towards the south, and is a pool for about two hundred yards. On the left side the pool is rapid and deep; on the other it ripples over a shelving bank of gravel. Whenever there are salmon to be had anywhere in the river, this pool always has a few; these, naturally, are lying in the rapids. In the shallows on the other side big brown-trout are always to be had. Why? I cannot tell, and I do not think anybody can. The pool is certainly not one which a fisher unfamiliar with the river would choose if it were of great moment that he should catch a few trout. It is mostly shallow; it is without weeds; it has no tributary, not even a ditch; it is as bleak and unpromising a pool as could well be imagined. Still, it is one of the best, if not quite the best, in the Tay. It is not, in any essential respect distinguishable by the eye, different from other pools which are known to be very poor; but he must indeed be a duffer, or a very casual angler, who leaves it with an empty basket. Although I cannot explain why there are so many trout in it, I have learned from experience on this pool one fact which seems to indicate a law about pools generally. When the trout are rising particularly well, all of them, or most of them, seem to be in the upper half of it. In the daylight, feeding trout, if they move at all, move upstream.

On a pool such as that just described, a pool in which there are trout of all weights common in the river, it often happens that the fish caught are approximately of the same size. How is that?

This question has no kinship with the well-known royal problem as to why a bowl of water holding a living fish was not heavier than a bowl of the same size containing the same quantity of water without a fish. "I doubt the fact, my Liege," said a courtier to the King; and the doubt was justified when the bowls were weighed. The assertion that is implicit in our own problem cannot be utterly gainsaid. Most anglers will admit it to be warranted. At times, it is true, the basket will have in it trout of all sizes characteristic of the water, or of nearly all; but at other times it will not. One day the small fish rise, and the large ones stay down; another day every fish landed is large, and the small ones seem to be gone. This is even more noticeable on a lake than on a stream. A lake on which I sometimes spend a few days is a typical case. Unless the weather is unfavourable, twenty trout in a few hours are to be had there. One day they will be not only four-to-the-pound but also quarter-pounders individually; another day they will be three-to-the-pound and a third of a pound each; sometimes, though not often, all of them will be approximately

half-pounders. On a river not far from the lake the uniformity in the size of the trout caught is in a certain respect more striking. There are in it fish of all weights; yet on any day only fish of practically the same weight are taken. Sometimes they are light, from a third of a pound to a half, and then one usually has a dozen in an afternoon; sometimes they are heavy, within an ounce or so, more or less, of $1\frac{1}{2}$ lb., and then one has four as a rule. Of the very small trout, those of the parr size, of which there must be millions in the river, I have never caught a single specimen. This, perhaps, is the most astonishing fact in the problem. What is the secret?

Any anglers whom I have heard discussing the question have a very simple view. They assume that sometimes only the small fish are feeding; sometimes only those of middle size; sometimes only the large ones. This is a good "working hypothesis," enabling you, on occasion, to foresee the state of the basket at the close of the day; but it is no more. Weather, as is well known, affects the appetite of the trout; but it has never been suggested that the same atmospherical conditions influence fish of different sizes differently. It is taken for granted that they influence fish of all sizes in exactly the same way. Were this not

so, there being small trout in some streams, middling fish in others, and large ones in a few, we could not have a generally applicable science of the weather in relation to angling. That we do have such a science, to be indicated in another chapter, invalidates the simple explanation. My own belief is that the puzzle we are considering is due to Individualism. That principle seems to be naturally inherent in every community, high or humble, great or small. It is at once a check upon the social instinct and the cause of racial improvement. It is to be perceived at work among the trout. There is an order of precedence in each shoal. If you watch carefully what goes on in a stream, an odd usage will be detected. During spring and summer the fish never lie closely together side by side. Rather, they are in Indian file. This peculiarity is best seen just below the entrance of a ditch or other tributary bringing worms or grubs or similar tidbits. You will find a good many trout there. The largest is poised close to where the tributary joins the stream; the second-largest is a foot or so behind him; the third-largest at a similar distance from the second; and so on in diminishing scale. Why? Observe the vigilance of the first trout, and you will understand. He is snapping at the juiciest grubs and rising at the most attractive flies. How

alert he is; how ravenous! He is nearest the entrance to the tributary because in that position he has first choice of the good things it is bearing down. For what he leaves, the others, in their turns, are on the watch. If any of these sought to usurp the place of the first fish there would be battle and a rout. Indeed, if you hook the first, the second will be established in his hover long before you need the landing-net. Does this lesson in the ways of trout shed light on the similarity in the size of fish by which a basket is so often characterised? If every trout in your creel is large, may it not be because, although all the fish in the water were in a mood to feed, the larger ones, being in particularly good appetite, bore themselves, towards the flies coming down, in a manner that intimidated the youngsters? Investigation will reveal something like a crouching fright among the small trout when the great fish are feeding. They may rise now and then; but in doing so they are careful never to be in a big one's way. A basket of small fish, which is more common, may be accounted for similarly. Young trout feed more frequently than full-grown ones, and when the large fish are not disposed to rise the small are free from restraint.

Now and then there comes another perplexing experience. Trout after trout rises; but not one

is caught. You look to see whether the hooks are right, and find no explanation. There is not the slightest doubt about the rises. You see the breaks in the water. You feel the jerks at the line. How is it possible that time after time fish can take such a risk and never pay the penalty? They are "rising short." That is the accepted phrase. It suggests its own meaning. If they rose a little less short, we are to understand, they would be hooked. They are merely snapping at the wings of the flies, and so escaping. Why they should snap at the wings, or how they can do it with such accuracy, is not always mentioned; but there is a theory. It is believed to be possible that some peculiarity of the light may deflect the vision of the fish; that their aim is upset; that they just miss flies which they really mean to seize. This sounds plausible; but it cannot be considered explanatory. The tugs at the line are so palpable that they could not possibly be produced by contact of the trouts' teeth with the soft wings of the lures. The steel also must be in some contact with the fish. What contact? Once I thought that, instead of being with the mouths of the trout, it was with some other part of them. This notion arose when, after many short rises and no fish, I landed one lassoed by the tail. The hook had looped itself with the gut, and the

trout was fast. In favour of the surmise there was the consideration that sometimes, although feeding busily, the fish are not paying much attention to flies on the surface. In the position of a sulking salmon, which is tail-up and head-down, some of them are preying upon flies that are rising from the bottom of the water. Was it not conceivable that they might frequently, by accident, strike against the hooks, which scratched though they did not hold? Trout are sometimes in a strange humour that might have a similar result. They try to drown flies that are sitting on the surface. They leap up and sometimes out, and strike the insects with their tails. Why the fish should wish to drown the flies, which rise again as quickly as fragments of cork, it is not easy to tell; but that they do try occasionally is beyond question. Can it be held, then, that when trout are "rising short" they are not putting their lips to the flies at all? I do not now think so. What seemed to be a revelation of the truth came, last summer, on a mountain stream. For two or three hours I had been catching trout quickly. Then the sport ceased. At nearly every cast, as before, there was a twitch at the line, which seemed to indicate a bite; but when I struck the line was loose. By and by, on the way upstream, I came to a large rock over-

hanging a pool; the bottom was bright sand, and the water, though of amber colour, clear; it would be possible to see all that should go on. Here and there, during the morning, I had witnessed, when the sun-rays were in a favourable slant, the action of a trout in "the time of the take." The fish had rushed at the worm, sometimes from near the bank, sometimes from the open water, and gorged it instantly. Now, in the pool under observation, the procedure was different. Almost immediately on the lure being cast into the water, a trout came to it; but the worm did not disappear. It was not gorged. Instead of taking the bait, the trout pushed it along in a series of little darts, apparently about an inch at a time. In the pauses between the darts the worm, as it did not sink to the bottom, was undoubtedly held by the lips of the fish; but it was held by no more than the skin. When I struck, it came away and the trout was free. This, with other trout, was repeated, again and again. It was marvellous, a feat of seemingly prudential nimbleness so startlingly perfect that only the witness of one's eyes could make it credible; but it was, I think, capable of being understood, and the interpretation seemed to explain the mystery known as "rising short." The stream was slightly flooded by a night's rain. During the morning, as is their

wont on a rise of the water, the trout had been feeding greedily on the food brought by the flood. Then they had become sated, and had ceased to eat. They had not, however, lost all interest in worms. These still attracted; but, disinclined to swallow any more, the trout merely toyed with the prey. They did so, in the manner I have described, with amazing delicacy and without risk. Is it not probable that when "rising short" the trout are treating our flies, after a feast of insects, exactly as these mountain fish treated the worms after a more substantial feast, snapping at them in agile curiosity and puffing them instantly away?

Our theory is encouraged by reflection on the general ways of the trout. In practically all emergencies, when not put off-guard by greed, he is a sagacious fish. The peril of drought which he miraculously survives in the Yorkshire becks is hardly greater than a risk which he frequently runs from flood. Quarter of a mile from where these words are being written is a river that is not infrequently obliterated. Heavy rains set in; inch by inch the stream, which has its source in a lake, begins to rise; within twelve hours it is overflowing here and there. If the storm lasts two days more, the valley, half a mile broad, is under water. Only the railway, near the middle, is to be seen. If

they have a journey to make, villagers must go to the station in a boat. Sheep, rabbits, and other creatures on the meadows are in terror, and many of them are swept away. In a recent flood a herd of Shetland ponies found themselves surrounded by the rising water. Their plight was pitiable. They neighed and screamed. Only a few contrived to stand their ground. The others perished. When the flood comes, man, though he has been familiar with these parts for centuries, is helpless. He cannot even save his cattle or his crops. The very earth itself succumbs. The banks break, and thousands of tons of soil are carried down the river. Gazing upon the turbulent waste of waters, the roar of which fills the air for miles on either side, one would think that the trout must have lost their bearings; but have they? When the flood has passed, how many shall you find stranded in the meadows? Not one. The whole little world around them is in anarchy, and they explore the meadows and even the roads, picking up much fine booty as they go; but when order is restored each trout will be back in his old hover, serene.

How are we to get him out?

The angler's methods are not a few. Before describing them systematically, we must consider the instrument which is common to all, the Rod.

CHAPTER II

THE ROD

Modern Simplicity—Steel “Centre”—Toughness of Cane—
Lockfast Joint—Spiral Joint—Treble-grip Joint—
Stability of Cane—Tubular Steel—Subtleties of the
Subject—On Clatto Loch—Cane Point Droops on
Striking—Stiffness Necessary—Greenheart Less Languid
than Cane—Casting Tournaments—Qualities in which
Greenheart is Superior—Qualities in which it is Inferior
—Hope for Greenheart—On Loch Dochart—Where
Lightness is Needed—Where Weight is Needed—Con-
clusions from experience verified by a simple Test.

IN days not long gone by rods were of considerable variety. Ash, hickory, lancewood, greenheart, whale-bone, and other materials contributed to their making. Hardly any rod was of single substance. Nearly every rod had at least two woods, and a tip of whale-bone was almost a general rule. In these later days the most skilful users of rods, and the most skilled makers, are in favour of simplicity. It may be said that the rods in the market or on the waters are of

only two kinds, and that each kind is in a sense elementary. Rods of one class are in all parts greenheart; the others are in all parts cane. Indeed, there is some expectation of still further progress in simplicity. Built-cane is so much in favour that the more enthusiastic of its admirers expect greenheart to be abandoned. Their belief is not likely to be justified.

The cane rod, which has been familiar for nearly a generation, was originally American. The structure is exceedingly ingenious. Canes, of a particular kind and properly seasoned, are cut into triangular strips; six of these are fitted, cemented, and bound together; and the product is a rod similar in shape to the natural cane, but without the hollow or the soft substance in the middle, solid. Such is the simplest type of the rod. Another type is "double-built." It is, in effect, the same implement sheathed in another set of strips. Usually a rod of that build, which, being designed for heavy work, is longer than the "single-built" rod, is fitted with a steel "centre." It is said that the steel is more flexible than the cane. If that be so, one cannot readily perceive what advantage it confers. The cane, when in dangerous stress, cannot be prevented from breaking by a core that gives more readily and farther than itself. Perhaps, as it is possible for a rod to be too light,



THE LOCKFAST JOINT.

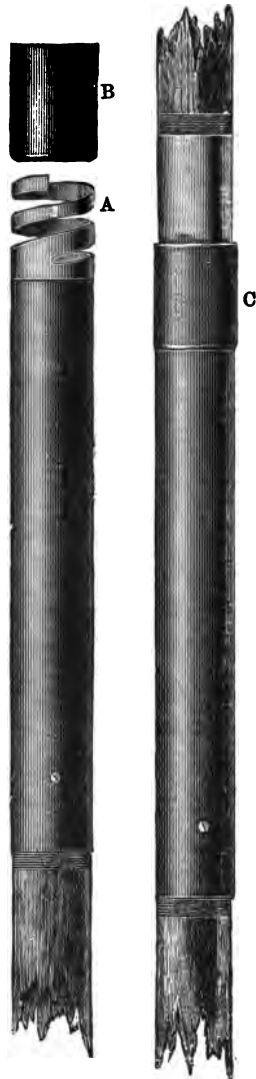
(From a sketch lent by Messrs. Hardy Brothers.)

the steel is of help in lending weight. This touches upon a problem to be discussed a little later.

The built-cane rod, when made by a first-class craftsman, is in certain respects admirable. It is tough. I have been using a twelve-foot built-cane, on waters of all kinds, for ten years, in which time it has taken over four thousand trout, a good many grayling, and, by happy chance, about a dozen salmon. It seems not a whit the worse for the wear. It has never been broken. It is still, when in repose, straight. Three or four times it has been back to the makers'; but only on one occasion has it been in need of more than varnishing and a fresh whipping-on of a ring here and there.

That was when, about four years ago, the ferrules had become a little worn. The pieces are fitted together by an ingenious device known as the lockfast joint. The name is accurately descriptive while the ferrules are not worn; but after that it is ambiguous. The grip being permanent vertically, neither of the pieces can fly out of its place, and thus, with the rod in question, I have never had a mishap such as is common with rods lacking some device of the kind; but when the brass has been worn by much putting in and taking out, even slightly worn, the pieces turn in the sockets. Then the line, instead of being straight from reel to tip,

becomes coiled on the rod, and at frequent intervals one has to readjust the ferrules. The trouble of doing so is easily overlooked; but there is a risk that the dislocation may have unobservedly come about when a lively large trout has been hooked. Coiled round the rod, the line would not run freely; and it is vexatious to lose a fish from such a cause. Other rods with fittings of the type described are probably better than mine, which is not of the latest make. The craft of rod-making progresses year by year. It is possible that ferrules are now of brass so hard that there is practically no wear at all. As there is but little friction in putting up and taking down a rod, there does not seem much reason why this should not be so.



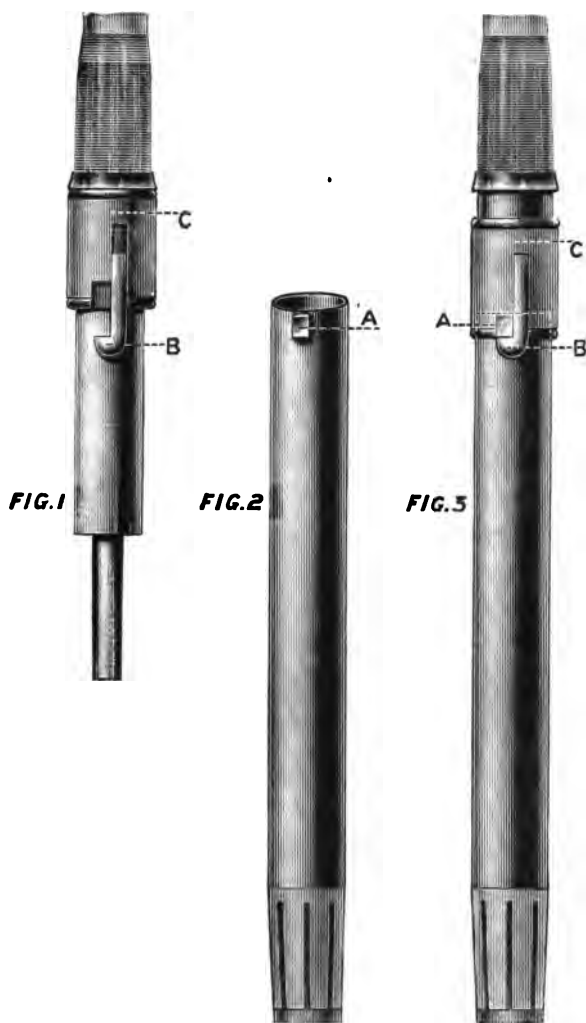
THE SPIRAL JOINT.

(From a sketch lent by Mr. P. D. Malloch.)

Another device for fixing the ferrules is depicted. The cap B, in manufacturing, is brazed over the spiral part of the hollow ferrule, A; a stud fitted on the solid ferrule runs through the spiral to the bottom; C shows the pieces put together. Theoretically this contrivance seems to be open to the possibility of undoing which was actualised in the lockfast joint; but I use a rod in which it is adapted, and have never found it a failure.

Although that should satisfy the most exacting angler, I will give an illustration of still another apparatus. It is the Lloyd treble-grip joint. Fig. 1 is the solid ferrule; Fig. 2, the hollow; Fig. 3, the two put together. On the hollow ferrule there is a stud, A; into which runs a hook, B, on the solid ferrule; C, on the solid ferrule, is a sleeve, which, drawn down, renders slipping impossible.

A point in favour of built-cane is that it supports these or any other fittings with extraordinary success. The seasoned cane is so dry that it seems not to shrink a hair's-breadth after manufacture. In the discussion as to what is the ideal rod, which is every year renewed in the journals of sport, there have been very many testimonies that built-cane does not snap at the base of the lower ferrule or at the top of the upper. These statements are in accord with my own experience. None of the



THE LLOYD TREBLE-GRIP JOINT.
(From a sketch lent by Messrs. Hardy Brothers.)

four or five built-cane rods which I have used has ever snapped at a joint or anywhere else. None, indeed, has ever become weak at a joint. The ferrules are still as rigid as if they were naturally integral parts of the structure. If we exclude from consideration tubular steel, the defects of which have not yet been overcome, a built-cane rod is as tough a rod as can be found. You can fish with it, from season to season, in confidence that it will not break at anything less than a very unreasonable strain.

Toughness, however, is not the only quality desirable in a rod. It is good when a fish is on; but, by itself, it is not of much use before that. Here we enter into the subtleties of our subject. These I have had occasion to study, ever since I made the discovery that rods have astonishing individualities. That was on Clatto Loch, lying on the southern uplands of Fife, a good many years ago. William M. Rhodes and I were fishing from a boat. The trout were rising well, and we had caught many. Rhodes had recently become the possessor of a built-cane rod, then a novelty in the northern latitudes, and was as proud as a baby with a new toy. "Try it," he said, generously; and we exchanged. The rises went on; but I could not hook a fish. There was some strange difference

between this new-fangled wand and my old green-heart. It lacked backbone. It was wobbly. Although I struck at the instant of a rise, the trout was always off and away, seemingly at leisure, never even pricked as far as could be known. Ten minutes with that invertebrate weapon sufficed me. In handing it back, I made no definite remark, being unwilling to risk a breach of the peace; but I reflected deeply. At every strike the point of the rod, instead of rising, had seemed to droop. Was that possible? It seemed against nature. It must be an illusion. Thus I reasoned at the time; and this, when the subject recurred, I continued to assume for years, until, indeed, only a few months ago, when, reading one of the journals of sport, I found stated as a certainty the very thought I had entertained with misgiving. The writer, joining in the recurrent discussion to which we have referred, declared that on the strike the first movement of the tip of a built-cane rod was downwards! Immediately I made an experiment, and found the statement correct. If you raise the rod gently all is well; but if you make the action of striking, which is sudden, the point droops. Very soon, it is true, the top-piece recovers and springs up; but between the droop and the reaction there has been time enough for a trout, if lucky, to detect his error and eject

the lure. The cause of the droop is obvious. The material is too lissome for its own weight. Toughness is only one mode of strength. It is of great value in a rod ; but the rod needs another mode of strength as well. It needs stiffness in a certain measure. That measure may be defined by saying that the rod should not be so pliant that the top-piece droops sensibly when the butt is sharply tilted.

Has greenheart, then, the quality which built-cane lacks? Testing the two on a trout-stream, one would be apt to conclude that it has ; but that would not be exactly the truth. Careful observation will show that a built-cane rod and a greenheart rod act similarly when you strike. There is in each case an initial droop of the tip. Between the two actions, however, there is one important difference. The droop of the greenheart is not so great as that of the built-cane ; that is because greenheart is less pliant. The recovery of the greenheart is quicker ; that is because greenheart is more resilient. In short, greenheart is less languid than built-cane. It makes the more mettlesome weapon.

Saving in one respect, to be considered immediately, the greenheart rod is, therefore, the better tool. Those whose acquaintance with angling is casual have a predilection in favour of rods that are very pliant. They seem to have inherited from

the ancients a belief that flies should be "worked" on the water in order to give them an aspect of liveliness, and a whippy rod does certainly lend itself better than a stiffish one to that wagging-up-and-down practice which may still be witnessed when you come upon an old-fashioned angler. The truth is that the flies, when on the stream, should be as little as possible affected in their motions by rod or line, and thus a rod of excessive pliability has no advantage to be set against its slowness in striking. With a breeze in your favour, it may cast well enough, but no better, no more comfortably, than a rod that is not whippy. When the breeze is against you, it is possible to cast with a stiffish rod fairly well, while with a whippy rod it is hardly possible to cast at all. A measure of stiffness, then, is desirable at all times. We have already seen what it is in regard to the dynamics of the rod as revealed in striking. The point of the rod should instantly, or almost instantly, respond as required to the action of the wrist. What measure of stiffness is best in relation to throwing the line and playing a trout? That has not yet been determined. Within recent years, "casting tournaments," local, national, and international, have brought out interesting facts; but these facts are concerned more with the comparative accomplishments of the competitors than with the

relative values of their rods. A rod that has been successful when wielded by one champion may easily be defeated when wielded by another. Besides, we should not be much helped towards answering our question even if the heroes of the tourneys, mostly professional rod-makers, could contrive definitely to decide the contest in which they are recurringly engaged. Their problem is not exactly ours. They seek to find the type of rod that will cast farthest; we are seeking the rod that, having cast far, will be delicate enough to be trusted against the cantrips of a vigorous fish. Eventually, perhaps, these two instruments may be found identical. Our point at present is that the rod which has the greatest reach at a tournament may not be the best on a stream. It may be so cumbrous that between it and a good trout the gut would snap. It is possible for a rod to be too unyielding. The proper weapon "gives" to some extent. That is necessary not only because pliancy helps in throwing the line but also because unbending resistance to the fish would in many cases result in breakage. This any one can verify by using trout-tackle on a heavy salmon-rod. He may, it is true, land a good fish; but he is much more likely, immediately after striking, to lose both fish and fly. Well, as has been said, the problem as to what is the ideal stiffness, or the ideal pliability, has not been

determined scientifically; but we are not altogether without means of judgment. I do not think that the majority of anglers who have tested the leading types sufficiently will disagree with me in believing that the ideal trout rod is most closely approximated in greenheart. When the atmosphere is still, the ordinary angler will throw a line with a greenheart rod as far as he can throw with a built-cane rod. In a favourable slight breeze, the one will do as well as the other. In an adverse breeze, greenheart will do better than built-cane. It will do better, also, in a favourable high wind. Power is then needful to the management of the back cast tidily, and, though the greenheart may break at a pull which the cane survives, it has, while intact, a lively energy, peculiar to itself, against which cane cannot compete. Then, besides being, as we have seen, quicker than cane in recoil from its slighter droop on the strike, greenheart, in a trout rod, is not appreciably harsher in action when a fish is hooked. Again, at that moment, its peculiar resilience comes pleasantly into play. In short, as between trout rods of equal length and approximately equal weight, greenheart, in action, is not in any respect inferior to built-cane, and is in some respects better.

Does it remain in action as long as its rival? That brings us to the matter in reserve at the

opening of last paragraph. For about nine seasons until the year 1905 I used built-cane rods only, and, as has been noted, none of them ever suffered from anything more serious than wearing of the ferrules. All my three or four earlier rods, greenhearts, broke in my hands. Not only did they break: they broke often, and they became, successively, incapable of effective repair. It is true that, one of them excepted, these rods were not indubitably first-class specimens of their kind. They were rods of modest merit, such as those in which uncles traffic when moved to benevolence by your birthday. Still, such as they were, they are, in retrospect, relevant to our subject. If all one hears and reads be true, they were not much different from greenheart rods in general. It is a common experience that greenheart is peculiarly liable to break. The reason is not far to seek. In a built-cane rod the natural skin of the material is retained, and the skin, besides being hard, does not seem to be porous. On the other hand, the piece of a greenheart rod, which is a strip of wood cut from a plank, has no natural protection against damp. It is varnished; but a scratch or a grazing, which may easily come about by accident, is sufficient to admit moisture. Then, whilst the grain of the one material is always straight, the grain of the other is in many cases

not so, and that is a source of danger. Besides, cane seems susceptible of seasoning to perfection, until it is absolutely dry and cannot shrink ; but it is difficult to season greenheart, which in many cases, after the rod is made, does shrink. Thus, while a built-cane rod hardly ever breaks in fair play, many a greenheart is undone therein. It is more liable to rot than the cane rod, and may snap unexpectedly at any part. A shrinking of the wood makes a looseness at the base of the hollow ferrules or at the head of the solid ones, and the brasses become levers, working against the wood at every cast ; this puts the rod at these parts in danger, to which they not infrequently succumb.

The answer to our question, then, is that greenheart rods, on the average, do not remain so long in action as built-cane rods. Their natural lives are briefer. Still, this statement is far from being a condemnation. You can have two first-class greenhearts for little more than the price of one built-cane. As each of the pair is readily liable to disaster, while the other is not so, that consideration can be made the basis of no more than a dubious economy ; but it may be mentioned. Economy of cash, however, is not, or should not be, the angler's sole thought in choosing a rod or rods. A rod in the soundness of which you can put absolute trust

guarantees economy of painful emotions, and built-cane meets that want. On the other hand, who shall deny that an attractive philosophy inspired the angler who declared that he had broken fourteen rods of greenheart and hoped to break many more? He makes light of the risk run with greenheart because the pleasure of using it is great. Perhaps he will not have to offer many sacrifices before he finds a rod capable of enduring sufficiently to satisfy demands much more exacting than his own. Throughout our comparison, it will have been noted, we have been speaking of built-cane in general and greenheart in general. The conclusion is no more sweeping than that of the rods in general use there are many more breakages among the greenhearts than among the canes. That is all. The first-class greenhearts are very much fewer than the first-class canes; and that may involve the discovery that the superior tenacity of the cane rods is casual rather than permanent. There is reason for thinking that some greenhearts are as sound as the best of canes. I believe this of the two which I myself recently acquired. I believe it not only from my own knowledge of them, not yet in itself a sufficient ground for certitude, but also on the authority of a celebrated technical judge, who tells me that he has been using rods of the same make for nearly

twenty years and has never had a smash. All greenheart is not cross-grained; some of it is almost as straight in the grain as bamboo itself; and there are one or two professional craftsmen who for more than a generation have been using none other than this unexceptionable wood. A professional rod-maker who uses cane is at an advantage over the rival who uses greenheart. The rival's stock of material affords, after careful scrutiny, only a few good pieces; while practically every cane is perfect. That is why, of all the rods in the world, built-canes first-rate of their kind are so common and greenhearts of similar excellence so rare. The best greenheart rods are in all respects better than the best built-cane rods, and are well worth the trouble of finding.

That is clear; but our question is not yet completely answered. We have discussed the rod in relation to the characteristic qualities of the two main classes; but we have not taken note of the conditions amid which it is to be used. These are various. A rod that is suitable on one water at one time is not necessarily suitable on another, or even on the same water in different weather. This I had impressive cause to realise not many years ago. Just before Whitsuntide a group of friends casually gathered at luncheon had agreed that the holidays could not be better spent than on Loch Dochart.

One of them, who had never fished before, had asked me to help him in choosing a rod ; and I had done so, at a well-known shop in Pall Mall. The rod was 12 feet and weighed 14 ounces. At the close of the first day on the loch my friend, having caught a few trout, was well pleased with it ; but next day, having been fishing for an hour with a rod lent to him by another member of the party, he suddenly exclaimed, " Why, this little rod works far better than mine ! " His tone conveyed a criticism for which there was some warrant. It meant that the rod I had chosen was too heavy and needlessly strong. In a certain sense that was true. The rod was a good one for general purposes, which I had had in mind, foreseeing that my friend would fish in many waters ; but it was not then quite right on that particular loch. The trout there, or at least those which rise to the fly, are not heavy, a fish over three-quarters of a pound being unusually large. They are easily managed by a very light rod, such as the 5-ounce one that had brought knowledge to my friend, who, being professionally at work with instruments of exact science, is quick in perception. Why should he have the effort of using a rod which, with the reel, weighed fully 1 lb. when one a third of the weight sufficed ?

Indeed, he might have pushed criticism farther.

Besides being needlessly heavy on Loch Dochart, his own rod was less effective than the other. It was not so quick on the strike. It missed many a trout that would not have been missed by the light rod. Since then experiments, voluntary and involuntary, have impelled me to the conclusion that lightness is an elementary quality in a perfect rod. The rod should never be heavier than the weight of the fish likely to rise demands. This is for a reason other than that of the comfort derived by the angler from not being unnecessarily burdened. The lighter the rod, the less is the droop of the top-piece when you tilt the butt. In the case of the small rods, weighing between four and six ounces, the droop is so slight as to be negligible. At that weight even built-cane may be considered perfect in its action. Loch Dochart is a fair example of a large class of Highland waters on which, in fly-fishing, a very light rod is appropriate. Most of these lochs have great trout as well as small ones; but it is only on rare occasions, usually in the opening weeks of the season, that fish over a pound rise at fly. Now, it is a fact, though not generally realised, that the smaller a trout is the more difficult it is to hook him. Besides being more rapid in movement, the small fish actually seem to be less reckless, when they rise, than the large ones. Large fish, when

they do rise, are usually in earnest, seizing the fly so uncompromisingly that they would often hook themselves if you did not strike; but so nimble are the small ones, it would almost appear that they rise with deliberate design to puff out the lure the moment it is taken. Thus, a quick rod, which is a light rod, is the best on lakes or streams in which the commonalty of trout are not over $\frac{3}{4}$ lb. On such waters I used to fish with a 12-foot rod weighing, with the reel, nearly 1 lb., and missed about half the rises; now, with a 5-oz. rod, the misses, I think, are not more than one in three. That is on lakes and streams where trout varying between $\frac{1}{4}$ lb. and $\frac{3}{4}$ lb. are the rule. Unmistakable evidence in favour of the principle I have ventured to state will be found by any one who tests it on an ordinary mountain stream, the fish of which are between $\frac{1}{2}$ oz. and 2 oz. In favourable weather there will be at least one rise at almost every throw of the flies. Use a 12-oz. rod, and you will miss nine chances out of ten; then try the lightest of rods, and the misses will be not more than three in ten. This statement is not made carelessly. It is the outcome of studious experiments. It sheds a helpful light on the question of what is the proper rod.

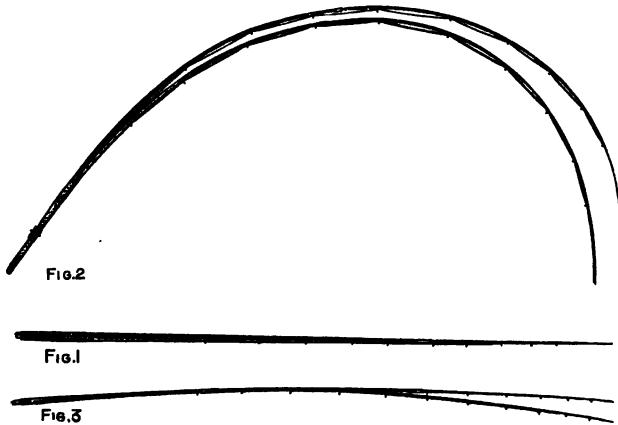
There is no rod that will suffice for all occasions. We must distinguish among the sets of circumstance.

Wherever the trout are under $\frac{3}{4}$ lb., the rod, on streams that are not too broad for a cast such as can be made with a 9-foot weapon, and on all lakes of the Loch Dochart class, should, in temperate weather, be not more than $5\frac{1}{2}$ oz. At that weight and under built-cane rods are almost if not quite as quick as greenhearts. On waters of another class the choice between cane and greenheart is, in calm or in a light breeze, mainly a matter of taste. I am thinking of large and quickly-running rivers in which heavy trout are to be expected. There, in the rough water, you throw the flies towards the opposite bank and let them go round and down. Usually, the stream, even in some of the pools, being rather wild, it is not by the eyesight that you detect a rise. It is by the sense of touch. You feel a pluck, or a pull, or note a stoppage of the line. Instinctively you strike, of course, and that is not wrong; but often the trout is hooked already. The strike, if it be not too sharp, does but confirm what the fish himself has done and minister to your agreeable sense of sportsmanlike alertness. Usually, that is to say, the result would be the same if you did no more than raising the rod decorously and reeling in. For work such as that, in which a strike in the ordinary sense is not necessary, a built-cane rod, 12 feet long and weighing about

as many ounces, is obviously as good, in fair weather, as a greenheart of similar dimensions. Though less lively to the hand, it will throw the fly as well, or nearly so, and when a trout is on its action is not less effective. In adverse weather, having less propelling force than greenheart, the built-cane is the less serviceable rod. Even on a lake, where you do not often cast against the wind, it is feeble when the breeze is more than light, and sorely buffeted in a storm. Greenheart picks up the flies and manages them much more neatly. Then, whatever the weather may be, the greenheart rod, either in wet-fly fishing or in dry-fly fishing, is at all times preferable on waters that run smoothly. There you see the rises, instead of becoming conscious of them by the sense of touch. There, also, though sometimes casting across and letting the flies go down a little way, you usually, whether the lures be floating or dipping, cast in some direction upstream, and therefore, the line being loose, have to strike on the instant of a rise, instead of trusting that the trout may hook himself. Amid these conditions, being quicker in action than a built-cane, the greenheart is the preferable rod.

Most of the trout waters in the United Kingdom are such as can be fished either with a 9-foot rod or with a 12-foot; but if one is to fish in many

places it is well to have two or three rods of different lengths between those sizes. A change from one to another is agreeable. Sometimes, also, as certain comparatively small waters hold heavy trout, such



GREENHEART ROD AND BUILT-CANE ROD UNDER TEST.

(Engraved from photographs.)

as cannot be kept in check by the lightest rod, it is practically desirable to have an ample choice.

Thus far we have been speaking from experience on the water. Our sketches, reproduced from photographs, show forth a test of rods within-doors. One of the rods is a 12-foot built-cane, and the other is a 12-foot greenheart; they are of the same weight, and have been in use for years. In Fig. 1 they are

together, erect, separate only when looked at through a magnifying glass. In Fig. 2 we see them as they were when each was holding a 14-oz. weight. In Fig. 3 they are released from the strain. It is the greenheart that makes the better appearance. At the pull its tip stood twelve inches higher than that of the other, and seven inches farther out. Just after release the cane rod had a "hang" six inches greater than the very slight bend of the other. The indoor test confirmed the belief that greenheart is superior alike in stiffness and in temper.

CHAPTER III

FITTINGS OF THE ROD

The Reel—Misdirected Ingenuity—"Regulating Checks"—Weight of Reel—The Line—What Should its Weight be?—General Principles of Adjustment—Fallacies as to Tapering—The Casting Line—The Back Taper—The Cast—Horse Hair—Silkworm Gut—Drawn and Undrawn—Methods of Tying—Tapered Casts—Throwing a Fly—What is the Knack?—From the Top-piece or from the Butt?

IN the case of a properly-fitted rod the reel and the line are parts of a scientific apparatus. They are in an approximately definite proportion to the weight of the rod, which, laid across a finger, balances at about nine inches above the reel.

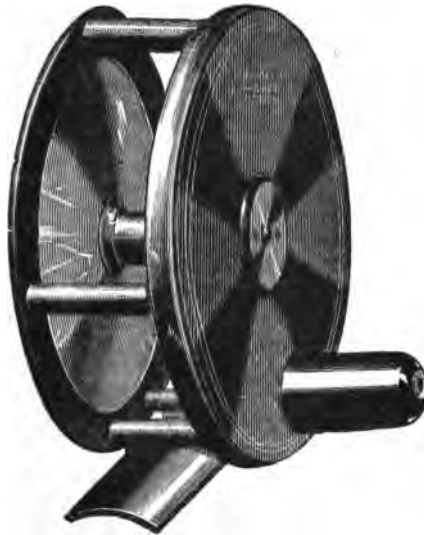
There seems to be a general agreement as to what is the best shape of the reel. That will be seen from our illustration. It will be noticed that the reel is large in the sides and narrow between them. Old-fashioned reels were less large in the sides

and wider. The improvement lies in the fact that with the modern reel you can wind up much more quickly. As looseness of line is not less likely than heavy strain to result in a trout winning free, many a disappointment must have been suffered of old through imperfect machinery rather than from lack of skill. With a modern reel you recover the line so quickly that as a rule you can keep in constant touch with a fish when he comes towards you.

Much thought has been directed to the perfecting of the reel ; but some of the ingenuity has been wasted. Consider, for example, the reel with perforated sides. The intention, which was that air should pass through the holes and dry the line, is not fulfilled. The air may dry the few inches of line that face the holes ; but it does not penetrate to the many yards inside, which, if damp and allowed to remain so for a few days, begin to rot. There need be no difficulty about preserving the line. It may be unwound, on reaching home, in a warm room, where it will be dried in half an hour ; or it may be put on a "drier," a simple contrivance to be obtained at the tackle-maker's.

There is some reason for thinking that the "regulating check" is another instance of excessive solicitude in invention. The elementary check, it will be understood, is the automatic break met by

the line when it is being pulled out. That is all right. It is the break that gives forth a cheerful sound when a fish is bolting. A break is necessary then. If the spindle were unchecked, the trout might make it revolve so rapidly that part of the line



AN AUTOMATIC-CHECK REEL.

besides that actually rushed off would become loose, and that might cause a kink and a hopeless tangle. It is not certain, however, that a "regulating check" is desirable. That is an attachment by which, on moving a small screw fixed to a rim of the reel, you can increase or lessen the strength of the resistance

to the outgoing line. Some very cool heads with a liking for machinery find pleasure in it; but the ordinary person does not manage it easily. Besides, it is not probable that there are many anglers who can attribute the loss of a fish to a good reel equipped with a fixed check.

What is the proper weight of the reel? This is a very interesting question. In any discussion of it which I have read a main consideration has been overlooked. It has been said that a rod should, when placed across a finger, balance at about nine inches above the reel. Thus are the proprieties stated in the shop of the tackle-maker, and what you are told there is not far wrong; but a better way of putting the case is to say that the point at which the rod balances should not be higher than nine inches above the reel. If the point of balance is higher, either the reel is needlessly light or there is too much weight in the part of the rod which is above the reel. The end of the butt must be at least to a certain extent weighty if the spring of the rod is to be utilised. That, however, does not imply that the spring will not be properly utilised if the end of the butt is so heavy that the point of balance is less than nine inches above the reel. Indeed, the action of the rod is not injuriously affected then. A little extra weight

at the end of the butt does not matter. The reason will perhaps suggest itself in remarks, soon to be made, as to the manner in which a rod should be handled. Here let it be noted that, whilst a novice may easily choose a reel too light, he is not likely to choose one that is too heavy. In other words, the limit of lightness, in relation to the rod, is fixed, fixed by the statement as to balance that has been made; but what we may call the limit of weight is variable. As it is often convenient to be able to use the same reel on different rods, this is of some importance.

Lines, like rods, have been undergoing evolution towards simplicity. They were in a sense simple enough until and in the age of plaited horsehair; but just after that there began a long period of experiment, during which the more fashionable were of complex textures. Nowadays the accepted line is of silk, plaited and made "waterproof." A still better may be discovered or invented; but we have reason to be satisfied. Plaited silk, besides being easily managed and pleasant to the touch, is very strong. Given fair play, the thinnest standard line of that material would not yield to the weightiest and wildest trout in the world. It may be asked, Then why use any other than the thinnest, which is the least likely to alarm the fish?

The explanation is implicit in the principle that rod, reel, and line constitute a scientifically-ordered apparatus. It is not mainly because large fish call for stronger tackle than the thinnest that lines are of varied size. It is because rods of different constitutions require to be fitted with lines of different weights. That is to say, a line which is thicker than another is thicker not primarily because it needs to be stronger but primarily because it needs to be heavier. Here, if we are experimentally handling rods as we go along with these reflections, we come upon a strange discovery. Naturally one would suppose that the lightest lines are for the lightest rods, the less light for the less light, the heavy for the heavy, and the heaviest for the heaviest; but that is not the case. A statement in the contrary sense would be more nearly the truth. At any rate, it would indicate a principle of adjustment between rod and line. An 8-oz. rod of no more than usual pliancy will throw the thinnest standard line better than the smallest rod. It will do so partly because that line has in itself less power than a less thin one of equal density to pass through the atmosphere, and partly because the weightier rod has greater power of propulsion than the other.

Are we, then, to have heavy lines for light rods

and light lines for heavy rods? A rule to that effect would, as has been said, indicate a principle of adjustment; but it would do no more. It would be partial and misleading. A very heavy line on a very light rod would injure the rod. The act of throwing a line properly puts a rod to a greater strain than playing a trout does. If the line is of more than a certain weight, the rod is unfairly treated. This is readily realised. At least, it will be speedily obvious to any one who casts a salmon line with a trout rod, or with the same rod and its own line throws a large salmon fly. The rod will be felt to be in dangerous stress. On the other hand, a very light line on a very light rod may be hardly less injurious. If there is a breeze from behind you, all will go well; but if the atmosphere is still, the light line, which must be driven through it, will call for too great a strain, and if there is an adverse breeze the rod will probably be broken.

For the same reason, the line to be attached to a large or largish trout-rod has to be carefully chosen. Such a rod may be overstrained either by too much weight in the line or by the force needed to propel a line too light. The largest possible rod, even a salmon-rod, could be put in similar straits by similar means. It might snap if it were used with the force that would be needed to cast a Mayfly on a line of

floss silk across a thirty-yard-wide stream, or if it were called upon to cover the same distance with a conger line carrying a baited trolling-flight.

How, then, are we to determine the fitting relation between rod and line? That cannot be done exactly. It is rendered impossible by the facts that the forces latent in any two rods of the same length and weight, even if they are also of the same material, are never to be assumed equal, and that if one rod is built-cane and the other greenheart the inequalities may be great. The fitting relation, however, may have been suggested by the general considerations just set forth. The rest, the actual adjustment, is to be settled by trial. Any expert, whether angler or maker of tackle, can find for any well-made rod the line that fits. That will be of a weight to bring forth the full power of the rod without excessive strain. Generally it will be slightly heavier than an unguided novice would think proper.

Judging from what has been said, the reader may be astonished to find that the thinnest of the standard lines seems to have been ruled out of court. What, he will wonder, is the use of it? It is of no use in fly-fishing, in connexion with which we have been studying the rod; but it is the best for fishing with worms and other baits that sink. It is the best in that employment because, whilst the weight

at the end neutralises its lightness, it is the least alarming to the trout.

Should the fly-fishing line be tapered? Should it, indeed, be double-tapered? These questions have agitated the anglers' clubs.

Lest the phrases do not bear their meanings on their faces, it should be explained that the single taper is constituted by a gradual attenuation beginning about four yards from the outer end of a line, and the double taper by similar attenuation going backwards from a point behind determined by the length of the average cast.

The theory of the single taper is that it prolongs the structure of the rod. The rod, for at least three-quarters of its length, tapers to the point; the line is thinner than the tip of the top-piece; it seems natural that the line itself should be graduated. Similarly, the double taper has the aspect of reasonableness. The weight of the part between the tapers, it is felt, must carry the fly or flies all the more easily by virtue of the bit of line just above the tip of the rod being so thin that it meets but little resistance from the atmosphere.

Though anxious to be as infrequently as possible in conflict with the experts, I cannot give unreserved assent to their teachings on the subject of tapers. A fallacy lurks in them.

In the case of the loop rod, a wonderful instrument still to be seen on the Clyde, the line may really be deemed a prolongation of the rod. It does not run from a reel. It is fixed to the tip of the rod. It can be cast farther than a line that runs from a reel through rings. In ordinary case the line, though it acts in unison with the rod, is not more a part of the rod than a bullet is part of the rifle. It is a projectile. It is tethered, captive; but it is dynamically separate, a thing thrown. What we have at present to consider, then, is not the nature of the propelling instrument, which has already been discussed, but the adaptation to its own use of the object propelled. Does the outer taper promote that usefulness? Any one who thinks it does is invited to note what often happens to the gut cast when the airs are even slightly unfavourable. It does not stretch straight and fall so. Although the reel line may have gone out fairly well, the cast drops in curves, sometimes in a tangle. It acts in that vexing manner because it is too light to overcome the resistance of the atmosphere. Now, our taper, it is obvious, should, in theory, tend to put a considerable portion of the reel line, the tapered portion, at the same disadvantage. It does tend to do so. In a favourable wind it does no harm; but in adversity of weather it

is worse than being of no avail. It is a source of positive difficulty, the difficulty that is inherent in the gut itself. Who shall gainsay this? I do not think that any one will on reflection. The experts who favour the taper do so with discrimination. While saying that it is desirable in dry-fly fishing, they admit, and indeed assert, that it is not good for the wet fly. In wet-fly fishing, they say, the "level" line, the untapered line, is better. It goes forth more nearly straight.

This recognition of how the level line acts gives away the case for the tapered line. What, at this stage of our inquiry into the principles of angling, does it matter whether the fly at the end of the cast is wet or dry? That matters nothing. In either case our purpose is to throw the fly as far as necessary and to throw it straightly. Clearly, then, the line by means of which this purpose can be accomplished more surely is the better. That is the level line.

The taper, on the other hand, carries less water with it than the equivalent part of the level line. It does not throw upon the water, after or before the fall of the fly or flies, such a heavy shower of spray. That is an advantage. It is an advantage, however, that can in greater measure be attained by another means. A yard of plaited gut between the reel line

and the cast does not carry any perceptible shower at all. With this attachment, known as "the casting line," you have more than the incidental benefit conferred by the taper and do not incur the result of the taper's defect. The plaited gut need not be lighter than the reel line. Consequently, while carrying no considerable water to be thrown upon stream or lake in a shower which, being unnatural, disturbs the trout, it does not increase the tendency of the cast to be buffeted by wind and fall in a coil.

The back taper is a sound device. It does lessen a little the difficulty of delivering the cast neatly. Besides, all the line behind it being comparatively thin, the reel holds more than it would hold of a level line sufficiently weighty to fit the rod. It is well to have not less than forty yards.

Instead of being joined by loops, which would form a knot that might not pass easily through the rings of the rod, the reel line and the casting line are spliced under a whipping of silk thread resined and varnished.

Then we come to the cast. In days of old that was made of hairs from a young horse's tail, and even now, especially in Yorkshire, there is sometimes to be met an angler who is faithful to the ancient usage. Horsehair has merits. It is thin; it is

round and smooth and slightly elastic; and, as the average strand is long, there are not many knots on a cast of hair. We can now, however, have silkworm gut of equal fineness and greater strength, and thus hair is out of vogue.

Drawn gut, which is the thinnest, is gut that has been pulled through a narrow hole in a steel plate. It has been pared in the process. It has become round, soft, and of equal weight from end to end. That is good; but the paring has deprived it of its skin, and that is not altogether good. Skinless gut does not reflect the sunlight so brilliantly as natural gut, and thus it is less flagrant on the water; but it is not so strong as natural gut, and is more easily frayed by coming into contact with stones or bushes. Still, there is no denying that it is often necessary. On very clear water in a dead calm it will enable you to raise trout when no success or very little would reward the best effort with undrawn gut. Besides, whilst not so strong as could be wished, it is much less weak than might be supposed. Skilfully used, it lands very large trout; and if it is not frayed, and not damp when put away for a season, it will be found well preserved when the time for fishing comes again. Within recent years the quality of gut, drawn and undrawn, has markedly improved.

Not a few anglers like to make their own casts,

and all have occasion now and then to mend a broken cast. It is desirable, therefore, to show the knots. Our sketches, I think, almost explain themselves. The knots are of two kinds, and in either kind the knot may be single or double. The



WATER KNOT, SINGLE.

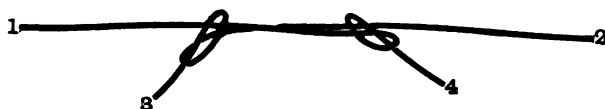
single knots are unsatisfactory. When the pieces are drawn together the waste ends have either to be cut off close, in which case the knot may slip; or little bits of the ends have to be left protruding, in which case the cast will catch many of the leaves or bits of grass that come against it in the water. Both



WATER KNOT, DOUBLE.

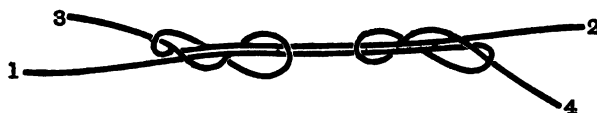
the double knots are good. In the Water Knot 1 and 2 are the main line; the other ends are to be cut off close when the whole is pulled together. Similarly, in the Fisherman's Knot 1 and 2 are the main line; 3 and 4, the pieces to be cut away when the gut is taut. Which is to be pre-

ferred? I myself use the Water Knot, thinking that it subjects the gut to less twisting than the other; but the Fisherman's Knot lends itself to a good way of fixing a drop fly to the cast. A single simple knot is formed on the gut of the dropper, not more than



FISHERMAN'S KNOT, SINGLE.

three inches from the hook; the gut of the dropper is passed between the strands of the main line; when the cast knot is drawn nearly taut the dropper is pulled down until the little knot on it is in contact with the cast; then, all having been made taut, the dropper is firmly jammed.



FISHERMAN'S KNOT, DOUBLE.

I do not myself use this method of putting on a dropper. That is because the Water Knot, which I like better than the Fisherman's, does not readily admit of it, and because to unloose the Fisherman's Knot in order to let in a fresh dropper would be to fray the gut.

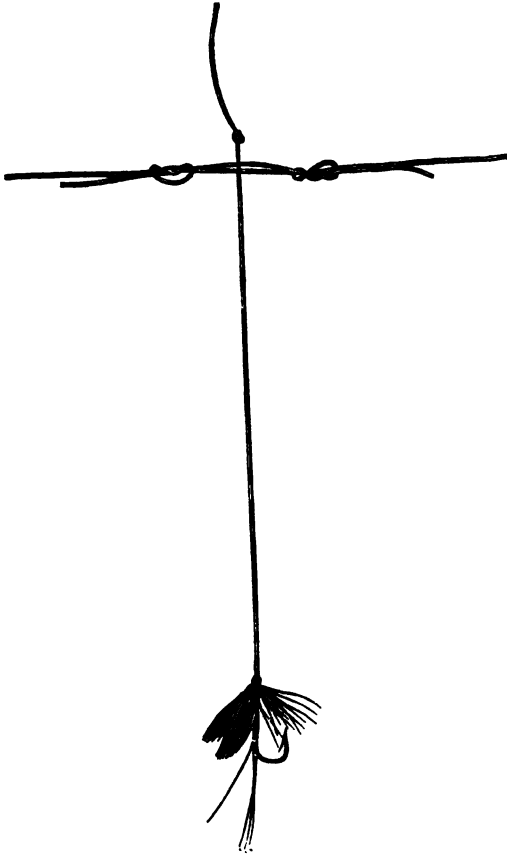
There are other methods of attaching a dropper. You may fix it, above a knot on the cast, by means of a loop on the dropper gut. This serves well when the water is rough or discoloured; but when the water is clear and quiet the loop, howsoever small, is clumsy.

You may mount the dropper by tying the gut round the cast by a single knot, passing the gut once round the cast, putting the fly through the loop of its own gut, and pulling taut.

Again: you may cut the cast at the place where a dropper has to be put, and make the gut of the dropper, short of the point from which it has to dangle, part of the cast itself. This is the neatest of the attachments, and if the gut of the cast and that of the dropper are of the same thickness and strength it is the best.

Dropper flies should not hang more than three inches from the cast. Indeed, it is well as a rule that they should be even less than that. The longer the gut by which a fly is attached, the more likely is it to become entangled with the cast. The shorter the attaching gut, the better the fly keeps away from the cast. Lest this should seem a reason for having the attachment as short as possible, it should be mentioned that, though there always is a risk of entanglement, often, especially in quiet water, a

three-inch dropper really does extend itself full-



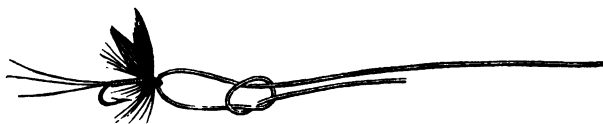
A DROPPER ATTACHMENT.

(Engraved from a model made by the Author.)

length from the cast ; and the farther the fly is from

the cast the more probable is it that a trout will rise. In common, I daresay, with many another angler, I have ineffectually spent much thought in endeavour to devise some means by which the droppers should always be at right angles to the cast.

The end fly, if dressed on gut, is tied on by the Water Knot or the Fisherman's Knot; if it is an



ATTACHING AN EYED-FLY.

(Engraved from Author's model.)

eyed hook, the method of attaching it is as shown in our sketch.

As in the case of reel lines, some casts are tapered, some doubly tapered, and some level. The double taper gives no advantage, and is open to the objection that a break is usually near the top, in which case the whole cast is lost. The level cast, if of fine gut, is easily put out of proper action by unfavourable weather. The cast of single taper is not so sensitive. It can be made to fall fairly well even if it has to be driven against or across a slight breeze. At first sight this fact may seem to be incompatible with our reasoning about a taper on the reel line; but

that is not the case. It is not because of any virtue inherent in its form that the tapered cast, in stress of weather, behaves better than the level cast. That is due simply to part of the tapered cast having more weight than any part of the level cast. In other words, if the whole of the level cast were as heavy as the thickest strand in the tapered cast, the level cast would act just as well, and probably a little better. If you are using only one fly, the tapered cast is the better. Two or three strands at the end are fine enough to be as little alarming to the trout as gut can be, and, besides helping against wind, the upper parts, being stouter than a level cast suitable for the same purpose, give you a sense of security. The tapered cast is good also, amid certain conditions, if you are using two flies or three. On water which is broken by its own impetus or roughened by wind very thin gut is not necessary, and sometimes the trout will rush at the droppers, hanging from comparatively thick gut, as eagerly as at the end fly, on the thinnest. Is there, then, no occasion for a level cast? Yes: there is. On a lake, the waters of which are nearly always clear, a level cast, the wind from behind the boat helping your flies out, is to be preferred. The thinner the gut, the greater your chance of rises. For the same reason, when two or three flies are in use, the level cast is the

more appropriate on a stream when the wind is fair and the water clear or calm.

Now our rod is up, and trimly rigged: ready. How are we to achieve with efficiency the throwing of the fly or the flies?

Sir Herbert Maxwell, honest man, frankly admits that he cannot tell how it is done. He is one of the most accomplished masters of the art; yet he cannot explain. I heard a reminiscent gillie become rhapsodical over the manner in which Sir Herbert casts with amazing accuracy to bewildering distances. What was the knack? "De'il only knows," said the admiring Highlander, reverently. That, in effect, is the master's own answer. "There is, indeed," he writes, "but one plain course to be taken by him who would learn the Spey cast, or the figure-of-eight switch, or the overhead cast, or the under-handed cast. Let him put himself humbly in the hands of a good fisherman who is willing to communicate the beautiful art. It is only in that way that he will learn of how much good greenheart and well-dressed silk line are capable." The learning, he adds, will be inseparable from suffering. "You watch your mentor delivering his cast; the long serpentine curve straightens over the water; a little tilt of the butt, and the cast, though the lightest part of the

projectile, falls not first, but farthest ; nothing can be more graceful and at the same time appear so easy." You take the rod and are a sedulous ape. "Your preceptor's movements were noiseless : how is it that when you imitate them the rod makes a loud 'swoosh' through the air? How is it that, instead of flying out far and fair, the line either falls on the water in what a good old gillie of mine used to call a 'burble,' or, at most, scrambles out in a wriggling, uncertain manner, depositing the fly half-a-dozen yards from the spot aimed at?" Sir Herbert thinks it is because, instead of casting with the upmost part of the rod, you have been casting from the butt. You ask, How are you to help that when it is the butt you grasp? "Well, I am sure I can't tell you," he says; "and, if I could, it would not be intelligible." Coming from one who is highly skilled with the pen as well as with the rod, these are subduing words. Still, one may indulge in a modest reflection on the tantalising topic.

Is Sir Herbert Maxwell right in saying that we have blundered through casting from the butt? One wonders; and with reflection the wonder gradually grows into certitude that he is not quite right. Having some good stories to tell in the chapter from which I have quoted, perhaps he was a little impatient in his technical discourse. If he

had not been so, he would have realised that the pupil's fault was not exactly what it seemed to be. It was not from the butt that the pupil cast. It was from the whole rod. With wide-sweeping arm, he waved it awkwardly behind him, and then flung both, arm and rod, wildly forth towards the water. That is what every one seems to do in the first attempt at throwing a fly. The rod is handled as if it were a whip with which the driver of a dog-cart wished to give the horse a gentle touch. The driver's arm, the shaft of the whip, and the cord go loosely together; and they have not far to go. That is not how a fishing-rod should be used. We are now thinking of a one-hand trout-rod. That and a salmon-rod work on the same principles; but, especially as we have been speaking of a whip, the dynamics of the question are best to be studied in the trout-rod. Besides this, it is to be assumed that the trout-rod is a good one. There are many rods with which even Sir Herbert Maxwell could not throw a fly satisfactorily if he had not the wind behind him. These are the very "whippy" implements almost always preferred by those who do not know much about fishing. The proper rod, though resilient, is not flabby. It is like a blade of well-tempered steel, capable of bending, but straight when in repose. Its flexibility, its spring, is not in the upper half

only. It begins just above the reel, where your hand is ; and it continues increasingly but equably to the top. If the rod were rigid all through you could not throw a fly. You could not even, I think, throw the line. It is through the resilience of the weapon that the impulse is conveyed. At what point, then, is the resilience, the spring, to be set in motion? Where it begins, of course ; which is in the butt, just above the hand. To throw a fly, that is to say, it is necessary to cast from the butt. It is from the butt, after hand and arm, that the primary impulse must proceed.

Throwing a fly is an act of feeling, or of instinct, rather than of reason ; yet perhaps it is possible by a careful effort, step by step, in simple sentences, to put the action into words. Indeed, as a good rod is made not at random but on scientific principles, this must be possible. We have only to perceive how the rod has acted when the fly falls lightly where it was meant to fall. Well, then, it has been tightly gripped. The novice in the mind's eye of Sir Herbert Maxwell did not grip it tightly. He had a loose hold. He worked much with his arm. He did not use his wrist. The butt, being less flexible than the middle and upper pieces, was simply moved forward. It did not act. To act, it has to spring. When it does spring, force goes

through it into the upper pieces of the rod, adding to the forces of which these are themselves the holders. On second thoughts, then, Sir Herbert will admit that it is from the butt we must cast. The top-piece is only the last agent in transmission of force to the projectile. It generates a force of its own, to be sure; but that force is much less than that which springs from the butt. How, then, is one to liberate what may be called the initial force? We have spoken of a tight grip, and that is obviously necessary; but it is not all. You must as you cast feel the whole rod alive and springing. That this may be, you must, besides gripping tightly, direct the action of the rod from within a very small area. The arm must not move as if you were bowling at cricket or casting a stone from a sling. It has to move a little; but it must be moved only so far as is necessary to give free play to the wrist. It is the wrist that measures the force required to send a fly to any particular spot. It is through the wrist that the initial energy is sent. To the wrist the eye communicates its aim. The wrist is the lever by which the resilience of the rod is freed and checked. Let us cast with the butt, then, and from the wrist; and hope that, after all, we may have the benediction of Sir Herbert Maxwell.

CHAPTER IV

ON THE WAY TO THE STREAM

Sport as Viewed by a Great Thinker—His Problem of Conscience—His Solution—Flaws in his Philosophy—An Attempt at Reconstruction.

THE pursuit of game fish, a sport peculiarly engaging to men of intellectual note, has stirred some of these to interesting exercises of conscience. For example, Mr. Herbert Spencer, at the height of his world-wide fame, was always ready to converse on angling. His liking for the craft, both as a pastime and as a topic, was so astonishing to himself that he examined it analytically. He sought to know why a man who could not think of stalking the red deer permitted himself to catch the trout. The answer at which he arrived was to the effect that sports are reprehensible, or reprehended, in proportion to the size of the quarries. The larger the creature you pursue, the worse your

conduct is, or seems to be. Thus, to kill a red deer is, or seems to be, the most cruel act of sport possible in this country. Being very large, the deer is capable, in its terror and pain, of bringing to your mind a sense of similar suffering within yourself. A trout being a much smaller creature, and not in structure so like a human being, you can fish without undergoing this torture. Indeed, a trout being in no noticeable relation, as regards size, to yourself, and bearing no outward sign of having similar sensibilities, you can be an angler with a conscience undisturbed. That is to say, your ethics are ultimately regard for your nerves. To shoot a stag would be to injure your own sensibilities, and that injury, frequently repeated, would render you callous, morally degenerate; therefore, you are virtuous in being opposed to deer-stalking. It may be that you inflict pain when you catch a trout; but the pain is not obvious; therefore, as your action is not hurtful to your character, you do not lose in virtue by being an angler.

Let us, on our walk to the trout-stream, spend a few minutes in thinking about what Mr. Spencer said.

There is truth in his doctrine. In as far as they are an expression of self-understanding, ethics must be a reflection of self-regarding instincts, from

which that understanding proceeds. If we are obliged to conclude that sympathy for any creature in suffering is ultimately sorrow for oneself, oneself imagined in the other's plight, we must e'en swallow the humiliating thought. The proposition, however, needs to be scrutinised. Is self-understanding invariably the sole criterion in ethics? Did Mr. Spencer do justice to himself in believing that he differed from that other fellow only inasmuch as his reflex suffering when he caught a trout was naught when compared with the other fellow's suffering when he shot a stag? Did he do justice to the other fellow in assuming him, as deer-stalker, to be morally degenerate, a person of seared sensibilities?

There is reason for thinking that he was not quite right in either case. The nature of man is much less simple than the exigencies of the synthesis which Mr. Spencer spent his life in formulating obliged him occasionally to suppose. Almost any human act that is more than involuntary or instinctive is the outcome of forces too complex to be stated off-hand.

We have admitted that ethics must be a reflection of self-regarding instincts. That they must be so is evident on consideration that it is only through these instincts, through self-consciousness,

that one can begin to realise one's duty towards sentient beings. Ethics, however, may be something more. The fact that they hold in solution our self-regarding instincts does not imply that they hold nothing else.

They do hold something else. As we shall soon perceive, they hold reason. That is a faculty called into exercise by the pressure of external circumstances upon the mind. If there were no external circumstances there would be no need for reason; indeed, reason, as we understand it, would be impossible. Now, what is the nature of the external circumstances, the things with which man is constantly in contact, upon which he has frequently to ponder? Are they all of them such as have counterparts in man's mind? It is evident that they are not. If they were, there would be no permanent mystery in the universe; the human mind, interpreting all things by the clues to be found within itself, would understand the universe completely.

Consider this in connexion with our specific subject. A man finds himself in a region where red deer or trout abound. In what relations with the creatures ought he to stand? According to Mr. Spencer, this is a simple problem. The key to it is in the man's own mind. To be freed from all perplexity, the man has but to hearken in obedience

to the promptings of his self-regarding instincts. He is at liberty to pursue and kill the trout, because the trout are not in the least like himself, physically, and therefore do not in their struggles convey any conception of what he himself would feel if he were being hunted; but he is not equally at liberty to pursue and kill the deer, because that animal, in its anatomy, does bear a resemblance to himself, and therefore is capable in its death-struggles of producing within him painful and injurious emotions.

There you have ethics according to the doctrine of Evolution.

Fortunately for man's happiness, it is demonstrable, I think, that, howsoever the doctrine may fare in other applications, it is not convincing in connexion with the subject now in hand. It holds error of two kinds.

In the first place, it is partial in its review of our self-regarding instincts. What these are is not completely stated when you name the self-protective instincts that are common to the man and to the deer. The man has self-regarding instincts in which the deer does not share. He likes flesh to eat, and the deer does not. He has the instinct of the chase, and the deer has not. He has, that is to say, two self-regarding instincts in which he is wholly different

from the deer. That being so, Mr. Spencer erred when he supposed that he had formulated an ethic of sport based upon the self-regarding instincts of man. Powerful instincts in that class were omitted from his review.

In the second place, Mr. Spencer's doctrine is partial in respect that it would not have afforded a full explanation even if his survey of man's self-regarding instincts had been complete. To consult those instincts exclusively, and to obey their prompting, is to have sympathy, and to act upon it. The sympathy is none the less valuable to other creatures because it springs from knowledge of ourselves and a desire not to injure ourselves in our own esteem. This is evident on consideration that knowledge of ourselves is the only source of sympathy, or even of intelligent understanding. This having been admitted, however, we are obliged to perceive that there are many indisputably ethical decisions in which more than sympathy, the reflection of certain self-regarding instincts, is involved. Of the function of the additional force, which is reason, Mr. Spencer himself gave many instances. With unexampled cogency, he maintained that whenever the State acted towards the people on an impulse of sympathy unchecked by reason the results were evil even for those whom the enactments were

designed to benefit. He sought to show that it was less bad that women and children, the poor and the weak, should be exploited by capitalists than that they should be deprived of liberty to work where they pleased, as many hours a day as they pleased, and for whatever pittance sufficed to maintain them. His contention was that any social action based upon unreasoned sympathy produced evils worse than those which it was meant to cure.

Was not this an assertion that the prompting of certain self-regarding instincts is not in itself a sufficient guidance as to our conduct towards others? It was; and it is amazing that a thinker so methodical overlooked the bearing of the assertion upon the problem of the ethics of sport.

The self-regarding instincts, which alone do not provide a canon of judgment as to man's relations with his own kind, are still more manifestly insufficient as a source of guidance about his relations with creatures of other kinds. Reason, without which sympathy is certain to produce evils in civilisation, is still more urgently needed in the wilds. In respect to human society we do have in our minds the keys, provided by the self-regarding instincts, which in certain cases are self-suspecting instincts, to many problems; that is because even the strongest and most self-controlled amongst us is capable of

understanding the frailties and the passions of the weak. In that relation we reason from our own instincts to the instincts of others. As touching the creatures of the waters and the wilds our self-regarding instincts provide keys to the elementary problem only. They tell us that in taking life we are to be as sparing as possible in the infliction of pain. In most sports that principle is recognised and respected. It could easily be shown that the sportsman's methods of taking life are the least painful. Think of the slaughter-house and the axe in contrast with the forest and the rifle, of the strangled salmon slowly dying in sea nets in contrast with a fish on an angler's line; and the truth of our statement will be exemplified. Beyond bidding us be merciful in the wilds and on the waters the prompting of the self-regarding instincts contributes nothing to ethics. In the wilds and on the waters, then, we do indeed have external circumstances invoking reason, that faculty without which sympathy, even among human beings, is prone to be worse than being of no avail.

Imagine yourself a dweller in a mountainous region. There are deer on the hills. As we are discussing ethics, which is a science applicable to all mankind, we must assume that there are deer on your neighbours' lands, and that they also are confronted by the philosophical problem. The deer

may not be many; but if they are not interfered with they will become so. What will happen? The deer will consume so much grass and heather that other animals, sheep among them, will be starved. In winter they will come down into the valleys and rob the stackyards. By and by, when they realise that men are not enemies, they will devour the cereals of the fields in spring and summer. Before very many years are over they will have multiplied so greatly as to be more than the land can provide with sufficient food. The forests, in which at present there are a few fights every autumn, will resound with the roar of battle. The red deer, now a magnificent creature, will gradually decline until he is no more like himself as we know him than the long, black, lanky fish of some lonely tarn, into which an angler's line is hardly ever cast, is like the plump, bright brown-trout of the Itchen. His species, that is to say, will become degenerate.

These, then, are the elements of your problem, your data of ethics. What are you to do? Shall you find an answer by consulting the self-regarding instincts?

In a certain measure you will. Regard for yourself will suggest putting a limit to the depredations of the deer. That regard you will weigh against

the instinct which makes you reluctant to inflict pain and death; and you will decide that pain and death to some of the deer, with some reflex suffering to yourself, is the less objectionable alternative. Even so, you will have not treated your problem exhaustively. Its most interesting aspects are still unconsidered. That which presses for your attention is the subtle arrangement called the Balance of Nature.

Being of an observant habit, you know that the balance is sometimes upset, as it has been in Australia, where rabbits are a plague, at the cost of misfortune. You know, also, though Mr. Spencer, apparently, often forgot, that man himself is one of the forces in the balance of nature. Thus you have external circumstances, things seen or perceived, facts in the problem of how you ought to act, pressing upon your mind. They are wholly independent of that class of self-regarding instincts, giving rise to selfish pity, which Mr. Spencer treated as being the sufficient criterion in ethics. They are of those external pressures upon us which are the cause and the occasion of reason. They are incidents in the wonder of the world. Their explanation by ourselves, the judgments to which they impel us, cannot be intuitive. They are facts for which there are no analogies native to the

mind of man. The self-regarding instincts to which Mr. Spencer bade us appeal when in doubt as to the ethics of sport have nothing to say about them. Those instincts and these facts are out of touch. Reason in judicial capacity, the mind of man judging about things of which its understanding is derived not through intuition but through experience, has to intervene. Its judgment is not to be biassed by the self-regarding instincts that issue in selfish pity. Ethics would be manifestly immoral, a vindication of the shirking of responsibility, if reason, the mind of man impinged upon by circumstance, posed by the riddle of the universe, left itself under such a thrall.

That is because, although man is himself one of the forces in nature, and presumably, in a state of nature, an exact contribution to the perfect balance, he is also, as far as we can see, in command of many other animal forces, and responsible for their excess or their deficiency. Man has jurisdiction over the beasts, the birds, and the fishes. His is not, it is true, the ultimate jurisdiction. There is a court above, Nature, which will punish any false finding at which he may arrive. Still, there he is, a judge, and charged to judge in the light not only of those laws of Nature which are instinctive, and therefore, as Mr. Spencer has shown, a cause of selfishness, but

also of those laws of Nature which he knows through observation, laws which, affecting him from outside himself, force him to be something more than an egoist, his ethics to be determined by something more than emotional self-interests.

To discover a credible ethic of sport, then, we have to go through a process of reflection more complex than that which sufficed for Mr. Spencer. Some of the data that bear upon the subject escaped his notice. We have seen what the complete data are. They are drawn from two sources. There is, on the one hand, man's knowledge of his own nature; on the other, there is man's estimate of external nature.

The self-knowledge reveals an impulse towards sport and an aversion from it. The aversion, dislike of reflected pain, is incidental, fleeting; the impulse, the instinct of the chase, is constant, and is encouraged by the permanent need to gain food either for oneself or for others. It is, therefore, the impulse that prevails. The impulse is modified by the aversion no more than to the extent that we are obliged to pursue and capture in the seemliest possible manner.

Man's estimate of external nature justifies the conclusion to which he is impelled by study of himself and his needs or the needs of his own kind.

In the first place, the deer and the trout minister to those needs, and that fact justifies taking them. In the second place, deer and trout, in common with other wild creatures, are actually preserved and strengthened, as species, by being the objects of sport; and that fact, human needs again considered, justifies taking them. In the third place, try as he may, man cannot divest himself of a feeling that, though himself a force in nature, and perhaps unseeing in that capacity, he is charged with dominion over the fish, the birds, and the beasts, and that it is his duty to see that these live and flourish in the proportions that Nature designs. As a sportsman he does his utmost to fulfil that obligation.

Thus, knowledge from either source, intuition or experience, points to the same solution of the problem.

It is that neither of the sports we have been considering is in violation of ethics.

This conclusion, sufficient in itself, is strengthened by a thought which, though so little open to analysis that not even Mr. Spencer endeavoured to dissect it, is strangely compelling. Man himself, as has been noted, is one of the forces of Nature. Obedience to his instincts, as well as the exercise of his intellect, must be essential in Nature's plan. Clearly,

then, the instinct of the chase being general in his kind, man, it may be held, is not only allowed by Ethics, but also obliged, to give the instinct play. Startling as it may be at present, that idea will, I think, have incidentally become a conviction when our subject has completely unfolded itself.

CHAPTER V

THE CAST OF FLIES

Unthinking Submission to Authority—"The Practical Angler's" Oversight—Balance in the Air—Weight of Flies—A Model Selection—Eyed Hooks or Hooks Whipped on Gut?—Occasions for Eyed Hooks—Occasions for the Others—Are Droppers Permissible?—The Arguments Against them—Objections shown to be Unsound—An Accidental Discovery—The Principle of Cross Lines and the Otter—Taboos in Angling—One of them Refuted—Days of Old and These Times—Chalk-Streams and Other Streams—The Three-flies Cast Justified.

Now, not a moment too soon, we have reached the stream. Are we to be at peace with all men, having occasion to call in question the thoughts of none? Is fishing a simpler subject than philosophy?

For two or three seasons, in the early stages of your practical acquaintance with it, you will, especially if you catch a good many trout, believe it to be so; but by and by, if you are alert, you will have misgivings. The lore of the craft is extra-

ordinarily well stocked with maxims. Some of these are many generations old ; others, equally persuasive, are comparatively new. It would seem that anglers are a peculiarly trusting and uncritical class. Their respect for precedent is so great that they hardly ever think of calling in question any of the tenets they hear from the lips or read from the pens of experienced men. Complete submission to the authority of the fathers, ancient or modern, is the rule of their placid minds in the hours that are spent on the water. This modest obedience is natural and becoming in early days ; but, unless contentment is always to wait upon little sport, it cannot be long maintained. The important considerations in fishing are of such wide variety, and in many cases so minute, so easily overlooked, that he who would be moderately successful must observe and think for himself.

Even before our line is wet we discover an error of tradition. Here is a passage from the famous book of Mr. W. C. Stewart. He is telling how to make a cast of flies. "The distance between the flies should be from twenty inches to two feet. If it is greater, in rough water the angler may pass over a trout without its seeing any of them, and there is nothing in the sight of two flies at a time calculated to alarm a trout." That is a strange proposition.

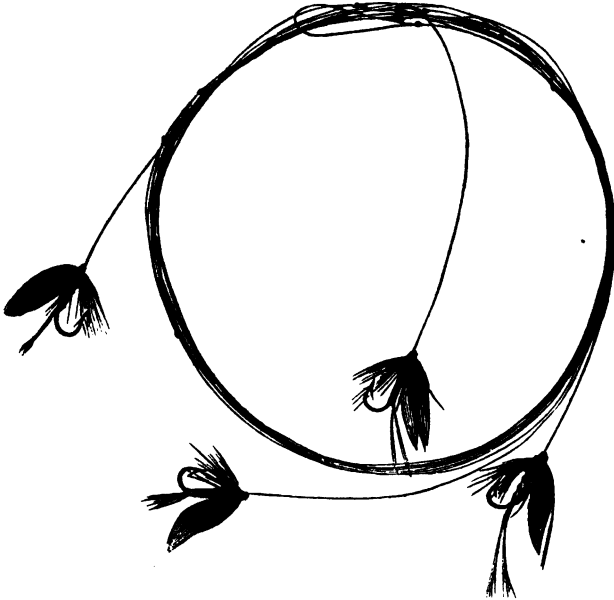
It is made on the assumption that all the trout in the stream are lying within the lines formed by one or other of the pairs of flies. Indeed, Mr. Stewart actually seems to take it for granted that a fish is lying exactly midway between one fly and another, and that if the distance between the flies is greater than two feet both flies will pass unseen.

This is a complex error. In the first place, a trout poised exactly midway between the flies could easily see both if they were a good deal more than two feet apart. Of course, at certain times of the year, those when the fish are well fed and flies are plentiful, he might not be disposed to go out of his way for the sake of either; but that is another question. He would certainly see them both, and if one were particularly attractive he would probably turn and rise. Besides, as has been hinted, the trout's position is not at all likely to be exactly midway between either pair. The chances are that he will be nearer one fly than the other; it is just as likely as not that he will be beyond the end fly or on the near side of the upmost one. We must remember that Mr. Stewart is not casting where the fish can be seen individually. He is casting on water that is rough and not very shallow, where the flies are thrown more or less at random. What, then, does he gain by having his flies in any par-

ticular positions on the cast? It is clear that he gains nothing. He is just as likely to come over a trout by having his flies three or four feet apart as he is by having them only from twenty inches to two feet. The flies, I think, should be three feet apart. Placed thus, they cover a good deal of water, and, as we shall see, give the cast, which is about nine feet, the proper balance.

Apart from this we are, as regards the cast, almost disciples of Mr. Stewart. Why did he mount only three flies, or, at the most, four, upon his cast? If he wished to be sure of making an offering to every fish within a reasonable radius, why did he not have a fly dangling at every foot of his three yards of gut? The reason, though he does not mention it, is obvious. A cast of more than three flies is not easy to manage. I have made experiments in this matter, and the results are interesting. A cast of three flies goes out upon the water beautifully; but a cast of four, such as the Lochleven one shown in our engraving, is clumsy. It wobbles in the air, and, unless there be a strong wind from behind, its fall upon the water is ungainly. In this there is some principle which a man of exact science could doubtless state and explain. A boy is conscious of the principle when he flies a kite. The kite can carry, and is often the better for, a weight

at the end of her tail ; she can even, if the wind is fair, do with another in the middle. A third weight will impair the gracefulness of her flight. That is



FAMILIAR ON LOCHLEVEN.

(Engraved from a photograph by Mr. P. D. Malloch.)

not because it is a weight ; it is because of its position. The extra weight might easily be borne at the right place, which is the end of the tail ; but the kite resents it in the wrong place, and so does the tail itself. Similarly, there is no room for more

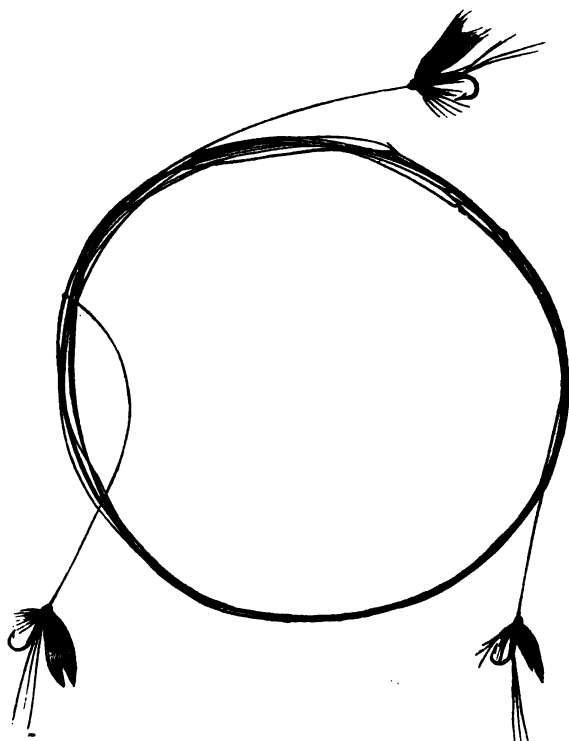
than three flies on a cast. Howsoever long the cast may be, there is no right place for a fourth. That is not the only conclusion to be drawn from experiment. A cast of three flies works much more sweetly than a cast of two flies or of one fly. It has in the air a pleasant balance which cannot be attributed to either of the others. Either of these will sometimes fall lightly, and as you wish; but, except in a moment of negligence on your part, or of adverse wind, the cast of three flies will always do so. Mr. R. B. Marston is wiser than perhaps he realises in that he sometimes uses three lures even when in dry-fly mood. Each of his three flies falls more daintily than the orthodox single fly would fall.

How is this? Again our man of exact science would be the best witness; but a suggestion may be ventured. Most of us get our casts ready-made, instead of making them ourselves; and, as we found in last chapter, they are tapered. They are pretty stout at the upper end, and gradually attenuate. In making them thus the professional craftsman goes upon the feeling that a tapered cast is more likely than another to stretch straight in its flight through the air and fall evenly upon the water. Is it not conceivable that a single fly fixed to the end of the cast, or, indeed, to any part of it other than the

very top, would impede the action which the taper is designed to facilitate? Of course it is. The fly has weight, which, though not much, is at least equal to the difference between the weight of the end strand of gut and that of the two or three strands immediately above it; and it has bulk, which presents resistance to the air through which the cast is projected. One can perceive, then, that the single fly on a cast undoes, or at least partly undoes, the purpose of the taper. Two other flies, properly placed, correct the disturbance by equalising it. The proper places on a nine-foot cast are, I think, three feet above the end fly and three feet below the reel line or the plaited gut. In these positions the flies tend to restore the balance inherent in the taper. If they are of the same size, however, they do not restore it completely. A fly near the top of the cast, where the gut is comparatively thick and heavy, has not so much influence in passing through the air as a fly of the same size at the end of the cast, where the gut is thin and very light; even the middle fly, though not in the same measure, is overweighted by the end one. That being so, it is well that the flies should be of three sizes. The smallest should be on the end; the second-smallest on the middle; the largest above.

By this means one acts according to the design that is both implicit and expressed in the tapered

gut. It will be said, by some one in haste, that, inasmuch as the size of a fly is to be determined not



A CAST OF FLIES IN GRADED SIZES.
(Engraved from a photograph by Mr. P. D. Malloch.)

by the mechanical necessities of the tackle-maker but by the size of the insect to be imitated, this is an empirical arrangement. The alarm is needless.

It is not suggested that the same fly should be dressed and used in three different sizes, which would be unnatural and unscientific; but what would be wrong with a cast having on the end a Gravel Bed, on the middle a Grannom, and towards the top a March Brown? These, in the order named, will give the gradation which the taper calls for. They are in season simultaneously. A similar series, graded and seasonable, can be found at any time.

Whether should the flies be eyed or dressed on gut? That might be deemed an unimportant question; but there are some anglers who do not think it so. It has been much debated in the journals of sport; many a time it has stirred private circles to evil temper; a volume has been published in order to show not only that eyed flies are preferable, but also that the part of the steel containing the eye, instead of being turned up, should be turned down. *The Spectator* has been agitated over the question. "Mr Hodgson, even in running water, we gather," that journal has said, "fishes with two or three flies to his cast, and (O horror!) he appears to fish with flies dressed on gut. We implore Mr. Hodgson to try eyed hooks, and feel sure he will . . . support the proposition that no invention of modern days . . . has done so much for human

happiness and comfort as the discovery of eyed hooks for trout-fishing of every sort."

I have tried them often. One of their merits is that they enable you to be economical. Usually the gut at the head of a hook of the other kind is worn and dangerously weak before the fly itself is wasted, and when that is so you have to sacrifice the fly. An eyed-hook fly, in the same peril, can be taken off and kept or there and then made taut again. Then, if you are fishing with a single fly, you can, if you wish, exchange it for another without lengthening the cast or appreciably shortening it; if you were using flies of the other kind, you would either have to add about a foot to the cast or be obliged to cut off a foot to make room for the new link.

The behaviour of the fly itself is a much more important consideration. Perhaps because the steel moves in the loop of gut as the fly is thrown, the eyed hook does not become weak at the head so soon as the other, which, indeed, if you are habitually inexpert in handling the rod, or momentarily forgetful, may be cracked off at a single cast. In that respect the eyed hook adds much to your ease of mind. You can fish with one for hours without looking to see whether the gut is weakened.

That is all, I think, that can be said in favour of

the eyed hook for trout-fishing. It is a good deal, to be sure, and often I use an eyed fly at the end of the cast; but, as *The Spectator* would perceive if he could get rid of his horror at the idea of two or three flies in ply at once, it is not all one has to think of.

How are you to attach eyed hooks as droppers? You could do so once easily enough; but if you changed a dropper fly for another two or three times, the bit of gut hanging from the cast would become too short. It would become too short, that is to say, if it had not been too long to begin with. Of course, you can, if you like, have in your book or case eyed flies attached to links of gut, and thus be able to have a new dropper fixed in the ordinary way; but that is an unnecessary provision. When you hear a crack in the air behind you, discomfiting sound, it is not a dropper that has gone wrong. It is the end fly. Only that fly cracks. The droppers endure much longer. Manifestly, then, eyed hooks as droppers are not preferable unless it can be shown that their action in the water is better than that of flies dressed on gut.

Is it better? Some authorities think so. Their belief is that the eyed fly is less severely fettered than the other, and that it has greater freedom of motion in the water. You will understand this

idea when you look at an eyed fly looped on a strand of gut and at an uneyed fly whipped on. While the pieces of gut are dry, both flies, it may be, will be in the same position, the straight parts of the steels being, as you hold them before you, in line with the links of gut; but when the two have been in water for a little the eyed fly will droop, tail downwards, from the gut, and the other will still be straight. There is, consequently, a notion that the eyed fly must make a finer appearance on the stream. Having greater scope for movement, some think, it must look more natural than the other, yielding more to currents in the water, and, if it floats, to currents in the atmosphere.

After much experiment, I believe this notion to be well founded. An eyed fly does have greater freedom than a fly dressed on gut. When used dry it is fair to see on the stream. Wings up, down it comes bobbing and trembling, responsive to every movement in the water or above, even, apparently, to the gentlest. Its fixture to the gut seems to hamper it not at all. A floating fly dressed on gut does not act so prettily. There is about it something of the aspect of a captive balloon. Now it is unnaturally still; anon it tugs; it is lacking in delicacy of motion; beyond a doubt, it looks like a hampered insect.

When one wishes a fly to float, then, it is an eyed fly one should use. When one does not mind if the lure dips a little, the eyed fly is not obviously preferable. I daresay that, if it has fair play, it is not less likely than the other to attract a trout; but it is not, I think, more so. Besides, as a dropper intended to dip into the water, it is at a disadvantage when compared with a fly dressed on gut. Its delightful freedom of action at the end of the cast becomes disagreeable wobbliness when the fly is a dropper. A fly dressed on gut is apt to become entangled with the cast, instead of hanging clear; but an eyed fly is apter to do so, and its entanglement is usually more complicated. For droppers, therefore, flies dressed on gut are to be preferred.

It will not have escaped notice that we have been writing just as if there were no cause for horror at the bare idea of droppers. Well, I do not think that there is any cause. Nature does not always offer the trout only flies of one kind at a time. Often she offers flies of many kinds. Why, then, should we restrict ourselves to one fly?

The anglers upon whose authority the restriction is urged are not unanimous as to the reason. Some of them say that a cast of three flies is clumsy, so clumsy that, instead of attracting the trout, it scares them. Others say that it enables you to catch many

trout in a day, so many that, if other persons fish as you do, the stock will be unduly reduced. It is needless to dwell on the fact that these theories cannot both be right.

Is either of them right? I do not think so.

The supposition that a cast of three flies is clumsier than a cast of one fly, already shown to be contrary to the science of the subject, is disproved by the experience of all who, on any stream or lake in the world, have tried both ways. If the three flies are reasonable in size, in shape, and in hues, and delicately plied, the trout shows no alarm at their coming towards him simultaneously. Far from being put about, sometimes, if the fly that most takes his fancy at the moment is not the one nearest him, he will move from his hover to rise at it.

This is what must be happening when fish after fish takes a particular fly and the other flies are ignored. Often these occasions are fraught with wonder, delight, and instruction. A good many are in recollection. Two will suffice to point a moral.

The first was on Ballo Loch in July. There I was the guest of Mr. W. D. Yool. His son, about twelve years of age, was given a rod; he had himself made up a cast. The only notable thing about the equipment was a fly with brown wings and a large

body of blue fluff. It hung heavily from the gut, between the end fly and the other, and seemed ridiculous. Nevertheless, it turned out to be the fly of the day. The lad was inexpert; but practically every time the cast, helped by the breeze, fell fairly on the water, a trout rushed at the strange lure. In most cases the fish was missed, or lost in the playing; but the young angler had a round dozen to his credit before the fly, the only one of its kind aboard, parted from the gut.

On the other occasion, again in July, I had been fishing on a lake for about two hours, and had caught nothing. I had tried a good many flies; but none of them was of the slightest avail. The insects about were few; the trout were not rising; perhaps thunder was impending. Still, the sky was bright, and the wind was steady, and this was a fine bay into which the boat was drifting. Before rowing back to the pier, I would try one other cast. Within three hours the creel was crammed. The middle fly on the fresh cast was a Red Palmer, and that was what the trout had been waiting for. Although, until after sundown, the rises at real flies were extremely few, it seemed that no trout over which the Red Palmer fell was inclined to resist the temptation.

These are incidents which every angler of experi-

ence will be able to cap. They justify the use of three flies at a time. If you deny yourself that resource, you may, after toiling all day, go home with creel empty and mind depressed for no other reason than that you have not chanced upon the proper lure.

I do not say that for every day of the season there is a fly that must succeed. As will be shown in another chapter, there are times during which the trout cannot be moved to rise by any means. I do say, however, that for many a day which seems hopeless your book or box does hold the appropriate fly. How are you to recognise it?

Precisians of the sport will tell you to look at the insects on the water, and choose an effigy of the insect that is commonest. That course will lead you aright as a rule; but it will not always. On many a day, especially during the height of summer, there are myriads of small flies on the water, and not a trout-rise to be seen; on a day now and then, at any time of the season, there are neither flies nor rises. It is obvious that on such occasions you must, if you would give yourself a chance of sport, take measures apart from the teaching of the precisian.

You must experiment. You must try fly after fly until you find the right one. In order that this task may be simplified, what may be called an

entomological calendar will be given in this volume. The names of the flies will be tabulated under those of the months in which the insects appear upon the waters. Even so, the range of choice is so wide that a day can be easily frittered away in failure by giving a fair trial to one fly at a time. Trying three flies at a time will multiply by three your chance of coming quickly upon the fitting lure. That, as has been indicated, is sometimes a fly in imitation of an insect that should be on the water but is not. Although the insect is not on the water, it may be in the water. This very important probability will be dealt with in another chapter.

A cast of three flies confers an advantage which I discovered by accident. In front of a bush on the other side of a pool deepened by a weir, about half a dozen good trout were rising greedily. My flies had fallen over them, time after time, for a few minutes; but always they had passed down unregarded. Then a needlessly vigorous toss sent them a little too far. The end fly was caught in the bush. I pulled gently; it did not come away. Then I tugged gently; and as I tugged the other flies bobbed upon the water. Thereby they acquired a marvellous attractiveness. Trout came at them, splashing. At first it seemed that they did not really wish the flies. Their action, I thought, denoted anger rather

than appetite. It was not the gentle and deliberate movement with which they had been taking the insects floating down. It was violent, a rush, as if the fish were enraged. The flies kept bobbing. One moment they touched the water; the next they were dangling two or three inches above. It seemed to be when in the air that they intrigued the trout. Immediately after one pair of fish had leapt and missed and vanished in a splash, another pair repeated the performance. This was not quite canny. Indeed, it was rather alarming. By and by, within two minutes I daresay, though the time seemed much longer, the excitement, common to the trout and me, subsided. A plump pounder so far forgot himself in his wrath, if greed was not his impulse, as to take the middle fly down with him in a somersault, tore the end fly from the twig, and soon, by dint of coaxing and coercion, flopped into the landing-net.

Since then, when fishing with a cast of three flies, I have sometimes endeavoured to make the droppers bob upon the surface.

Often it is possible to succeed.

It is always easy when you are allowing your flies to move round and down in a rapid stream. If the wind is strong and in your favour, it is possible, though not easy, even if you are casting upstream or

across in slowly-moving water. You can then, to some extent, act as if you were using a blow-line. Sometimes the trick is successful. When it is, the trout, I think, take your fly to be one of the insects which dance up and down upon the water, touching and going, when their eggs have to be laid.

On a lake in a high wind it is very easy to make the dropper flies imitate that action of the insects, and there also, though not so often, I have found it useful to ply the cast in that manner.

Once, on an inventive inspiration, I attached a large dry leaf to the end fly, and sent it forth. The wind kept the leaf tending to drift away at a rate greater than that at which the boat was moving; thus, the line being pulled, the other two flies bobbed beautifully; and the trout rose well. That evening, however, as I walked away from the lake I was burdened by something besides a weighty creel. Conscience makes jurists of us all. Between cross-lines, which are illegal, or the otter, which is illegal, and the leaf-line, I was unable to perceive any difference in principle. I have not plied a leaf since then.

It will be perceived, from what has been said, that those who condemn a cast of three flies as being clumsy are out of touch with the facts. Similarly, there are oversights in the disapproval of that tackle on the assumption that it is too effective. Of

course, certain admissions must be made. The angler who uses a single fly where he might use three flies imposes disadvantages on himself. It may be that he has in his book, instead of having on his cast, two lures that would attract the fish. Perhaps he forgets that sometimes, as during the Mayfly period, a rise of trout is at insects of several kinds. Occasionally, it would appear, while all the large fish are moving, this trout is taking flies of one species and that trout is taking flies of another. Clearly, then, if two of your lures are such as the insects on which the fish are feeding, you are likely to catch twice as many as the man who has on his cast only one of these, and thrice as many if all your lures are appropriate.

Nevertheless, it is observable that the angler with a single fly means to do his utmost, even if that should result in his having unprecedented success. Can it be that his ideal necessitates a system of conventions designed to keep the sport comparatively meagre?

One is obliged to imagine so. His mind cannot be interpreted otherwise. Never, in literature or in life, have I found him reserved in rejoicing over a packed creel as the result of a day on the single-fly method; but we must put that aside as being no more than a natural lapse from logic. He does

really think that angling should be surrounded by taboos such as will constantly prevent the sport from being as good as it might be. He deems this necessary to the permanence of our common interests. He believes that if we all fished with three flies at a time, and that to the utmost of our powers, the trout would ere long become as rare as the golden eagle. That being so, his self-denying ordinance, which he would have us to accept for ourselves, is well-intentioned and to be considered with respect. In its full application, as barring methods of sport not yet touched upon, it will be so considered in another chapter. Meanwhile the question is, Does the use of three flies perceptibly injure a trout-stream?

The question cannot be answered by the simple Yes or No which learned counsel demands when he is in a tight corner, or is anxious to put yourself there and to confusion. In that region of our land which is most famous for trout-streams it is not usual to fish with more than a single fly. At least, we must assume so. I have often used three flies there, and have never been reproached for having used three; but the rule does really seem to be according to the taboo. As regards Hampshire, therefore, our question is not answerable directly. We could answer it so only if three-flied casts were

common there. As they are not common, evidence directly connected with that highly-favoured county, in relation to which the taboo first arose, is lacking.

There is no lack as regards the country in general. Evidence is abundant in that respect. Before seeking to discover what it points to, we must note the temptation to exaggerate misfortune. This is almost irresistible. The trout caught during one's earliest days by the water were so wonderful at the time that their size and even their numbers have insensibly expanded. If now, after the lapse of anything over ten years, your first real success seems to have been a dozen trout weighing nine pounds, be sure that the weight was not more than five pounds, and that the number was a little short of twelve. This does not imply that you are untruthful. It implies only that you are properly constituted, a person capable of appreciating the joys of life. Please read the word *appreciating* in its exact sense, and realise what a blessing it is that you think of bygone times with generosity. If the past did not shine in your imagination with a little added splendour, you would not think so composedly of the future. If you saw the past exactly as it was, and with the very feelings you had then, the future would be a subject of foreboding rather than of hope. It is largely because what a poet calls *Natura Benigna*

has implanted in the human memory a habit of creative untruthfulness as regards the experiences of youth and manhood that the further years are faceable with more than courageous resignation.

Making allowance for the tendency to overpraise the past, we find it impossible, as regards the trout-streams, to say that it was not really better than the present. In many cases, even as compared with their state a few years ago, after the faculty of wonder had cooled sufficiently to enable us to be at least approximately accurate in recollection, the streams show a marked falling-off; and that has to be accounted for.

It is not easy to deny that the method of fishing now under consideration, which is deemed legitimate practically everywhere outside the South of England, may be a contributory cause. There are now very many more anglers than there used to be, and if the method is equivalent to multiplying each of them by three the subject certainly does assume an ominous aspect. On the hypothesis mentioned, an angler on the Tweed is thrice as deadly a foe of the trout as an angler on the Test.

Is he so in fact? I am inclined to think so. My belief is that if a skilful angler using three flies and a skilful angler using a single fly were to fish on equally good stretches of the same stream the one

would be not unlikely to have approximately three times as much success as the other.

Still, this thought is not sufficient to condemn the three-flies custom. If that were the main cause of the general decline of trout-streams, the decline would be greater in the Tweed, where the practice is in vogue, than in the Test, where it is banned; but that is not the state of affairs. Anxiety as to the future of the waters is greater in the South of England than anywhere else. In spite of the scrupulous consideration with which they are treated by anglers, the streams in that region have on the whole fared worse than those in the West, or those in Wales, or those in Scotland, where the sport of angling is pursued under much less stringent conventions.

It is obvious, then, that the use of three flies at once has but little to do with the decline of the trout anywhere. That is probably the least of the adversities from which the streams suffer. There is reason for believing, indeed, that none of them can be seriously affected by fly-fishing on any recognised method. Amid natural conditions trout are so prolific that the stock in almost any water is not perceptibly reduced by the efforts of fair and sensible anglers. The real causes of decline are apart from angling. One of them is agricultural drainage, the

results of which will be shown in our closing chapter. Another is pollution, which is so likely to be rendered unnecessary by new methods of utilising sewage and the refuse from manufactories that streams now wholly ruined, such as the Wandle, may ere long be restored to the trout. Another is poaching by means of nets, which, though not prevalent in the South of England, where the waters are well watched, is an active industry in many other parts, where there is practically no watching at all.

Anglers themselves, in their own conduct, can do much to promote that revival of helpful interest in the streams which is noticeable all over the kingdom. It is a striking fact that in many a place the decline of the trout has been a falling-off not in his numbers but in his average size. That is the case in practically every quarter, outside the South of England, where there is neither serious pollution nor a near market for the produce of poaching by nets. The fish still swarm; but they are small. Memorably large ones are rare in the basket; they are rare in the water also. That is the result of much angling. Except in the great rivers, heavy trout are not always concealed. They are often visible to anglers when the stream is clear. Day by day throughout the season they are objects of special effort. Besides, whenever there is a real rise of

trout it is the large ones that are likely to be taken first. When a large fish is feeding eagerly the small ones near him are timid. The result is that in many a stream heavy trout are now fewer than they used to be. To catch the largest trout is the ambition of every angler in any water, and it is mainly because they are beset by many more anglers that large trout are rarer than once they were.

In this, however, there is no reason for despair. It is possible to bring about an increase in the average size. That would come to pass within three or four years from the establishment of a rule that all captured trout under a certain weight should be returned to the water. The limit need not be uniform. What would suit one water would not suit another. It would be of no use, for example, to apply to the Highland lochs a rule which would be rightly applicable to a lowland stream. If it were decreed that no trout under $\frac{3}{4}$ lb. should be retained, we should very often have to go empty away from the lochs, and, as these are in many cases overstocked, that would not be to their benefit. For the same reason, it would be useless, until measures to be indicated in another chapter have been taken successfully, to apply any such standard to the mountain streams. These, as a rule, are overcrowded; the trout in them are stunted, very

small ; ampler food would make the fish grow ; time alone does not affect their average size. On lowland streams, however, a rule that no trout under $\frac{3}{4}$ lb. should be taken would be befitting. A rule to that effect governs the conduct of anglers on a long stretch of the Test, and the result is that trout above $\frac{3}{4}$ lb. are plentiful.

It may be said, "That is all very well for Hampshire, where the waters are chalk-streams ; but it might not suit in other regions, where the land is clay or loam." Any such criticism would be beside the mark. "Chalk-stream," a phrase of such pleasant associations that it is a favourite in books and talk about angling, has caused much misunderstanding. It seems to mean a stream that is different from any of the common kind. That is a mistake. There is no essential difference between a chalk-stream and an ordinary stream. Both are of water approximately pure, and that is the same all the world over. In time of rain, it is true, the one stream, not having much clay or mud swept into it, does not become so deeply discoloured as the other ; but at normal times there is no difference. Those who fish on chalk-streams only are in the habit of writing and speaking about the great clearness of these waters. They seem to suppose that streams of the other class are muddy. That is not so in all

cases, and when it is so it is not due to the nature of the land from which the streams are fed. The Tay or the Tweed in ordinary flow is as clear as the Test or the Itchen in ordinary flow, and any other stream of which that cannot be said is discoloured only by pollution.

The chalk-streams owe their prosperity and fame to the care that is taken of them. They owe it to that alone. There are in this country many other streams which are by nature quite as good. That is true, for example, of most of the "free waters" in Scotland, besides being true of others. The injuries they suffer, and the remedies that might be applied, will be discussed anon. Here it is relevant to say that a rule establishing a limit of weight under which trout should not be taken would in a very few years work wonders all over the kingdom. That restriction is really necessary. To forbid the use of three flies at a time is like opposing the tide with a mop. It is absurd.

CHAPTER VI

FLY-FISHING ON A STREAM

Similarity of all Streams—Water Deep and Slow—An Instructive Experiment—Where a Fly Should Fall—An Astonishing Cast—The First Rise—What is Likely to Happen—Water Wavy, but not Quickly-flowing—Rapid Glides—Water Swift and Broken—Flies Going Round and Down—Why That is Sometimes Right—Observations on a Mountain Stream—Necessary Deductions—Why Some Large Trout Frequent Rapids—Playing a Trout—Why Shallows are often Preferable.

WITH three flies, then, we will fish in this stream for a few miles. You ask, Where is it? In any region you like to think about. Until we have visited a good many parts of the country, we are inclined to take it for granted that knowledge of a familiar river affords no clue to the nature of other rivers, and that ability to catch trout in one water does not imply ability to succeed elsewhere. There is not much need for this misgiving. Though various in size, all streams are astonishingly alike;

and the ways of the fish in one of them are similar to the ways of the fish in any other.

Here, where we now imagine ourselves, the water is deep and slow. You must, therefore, as you fish, move upstream. If you took the other direction, fishing as you went, you would usually be casting downstream, or allowing your flies to move round and down. That would not be right. How wrong it would be you will realise when you come to a place where the trout can be seen and watched. Such a place is where the water is about a foot and a half deep and the bed of the stream bright enough to allow the fish to be visible athwart it. If there are trout opposite, throw your flies over them, and observe what happens. It is possible that at the moment of the cast alighting, or soon after, a trout will rise at a fly; but if that does not happen a strange thing will. Unless your flies have scared the fish, one of them, or several, or all, will follow the lures as they go round and down. If you are standing two or three feet above the water you will see them distinctly. At times when they are not so much overfed as to be indolent, the trout will follow the flies again and again and again. You can see that they are curious but timid. If the faculty of thinking could be attributed to them, we should say that, whilst liking the looks of your flies,

the fish are unable to understand how such fragile insects contrive to swim in defiance of the current. They are willing to eat but afraid to bite. It may



RIVER FLIES.

(Engraved from a photograph by Mr. P. D. Malloch.)

be said that amid such conditions they never do bite. At least, after many trials, I have never once known a trout to make the venture on following a fly in the suspicious manner described.

That is why we must move upstream where the

water is flowing slowly. You then cast upwards, and your flies move in a manner that seems natural. A cast straight across, at every step, is not contrary to proper understanding. The flies will move down naturally for at least a yard. At each cast thereafter, before taking another step onward, you should aim a little farther to the left if you are on the left bank of the stream, to the right if you are on the other. In that way you will gradually fish the whole stretch.

Systematic procedure of this kind is advisable either when the trout are rising at insects very well or when they are not rising at insects at all. If they are not rising at all, you have, where the water is deep, no means of knowing exactly where one may be, and should make trial at as many places as you can. If they are rising well, it is not desirable to hurry; the more trout you catch in each two or three yards of your progress the more you are likely to catch before you are at the end of the stretch.

On the other hand, if the water is broken by rises only here and there, and you find that casts methodically at random are not fruitful, there is no reason why you should persevere according to rigid rule. It often happens that all the trout, or most of them, are in a humour to rise simultaneously;

but sometimes only one here and there is rising. When that is so, it is well to cast at the rises.

Most of the authorities say that the fly should fall three or four feet above where a fish has broken the water; but there is reason, practical as well as theoretical, for doubting this. If you are straight behind a fish in quiet water he sees as much of the gut as you throw above him, and that may make him wary about the fly. It is better, therefore, if you are well behind, to let the lure fall exactly where the water was broken.

Indeed, it may actually be well to let it fall an inch or two inches below that. Besides seeing in front of him, the trout sees to the sides and a little behind. Occasionally, after ignoring a fly time after time when it came down to him, a trout will rise at it if it falls a little behind, and when he does rise so he rises with exceptional resolution. I think that is because, having had no leisure for inspection, he does not doubt that it is an insect, and is anxious to seize it and be back in his poise without delay. At any rate, it is certain that when a trout turns aside or down to take a fly he hardly ever misses.

If, instead of being behind a trout, you are opposite, there is no objection to letting the fly fall a little above him. The gut is not then so obtrusive.

Still, if he does not take the fly when it has come down to him, it is well to try him by dropping it at his very nose or at his gills.

Especially to the novice, these instructions may seem exacting. I shall not wonder if some reader says, "Who can throw a fly so punctiliously? Can one aim with a rod as neatly as one aims with a rifle?"

The answer to these questions can be illustrated by an incident of which I was a witness. On a June evening a large trout close to the bank on the other side of the stream was feeding on midges. His rises were as regular, and almost as frequent, as the ticks of a grandfather's clock. He was going up and down, up and down, up and down; not as the insects offered themselves, but as it suited his composure that he should take a midge from the abundance. One youth was casting at the trout; another was looking on. Said the angler, "I'll have that fish, whether he takes me or not." "How?" his friend asked. "I'll throw the fly into his mouth." The trout went on rising; the angler went on casting. I perceived the angler's notion. It was that if he kept casting accurately and the trout continued to rise in the regular manner mentioned the fly would ere long fall at the very moment when a midge was being taken. This reckoning was justified. The large

trout was hooked and landed by a fly that had been cast into his mouth.

Within its own range, a good fly-rod is very nearly as sure a weapon as a rifle. Even the wind, if not strong or gusty, can be allowed for with approximate precision. You will not always make the fly drop within an inch of the spot at which you aim; but if you have an aptitude for the rod and practise diligently, you will gain a skilfulness which before experience is incredible.

You need not be perturbed about what is to happen when for the first time you have a rise. The perturbation that will follow the great event will be in itself sufficient. If the trout is of any considerable weight, you will not, I think, catch him. If you feel the trout, besides seeing the break of the water that shows him to have risen, you may, in excitement, strike so hard that through a snapping of rod or tackle he and you will be parted there and then. On the other hand, whether you see only, or both see and feel, you may be so much overcome as to be able for no action whatever. In that event it is just possible that the trout may be defeated. He may have hooked himself. If so, being evidently of an unaggressive disposition, you will not use violence against him. You will be, for the time, his respectful and obedient servant, letting him go as he

may list, following humbly ; and thus, by good hap, and perchance the help of a friend with a landing-net, you may kill him by kindness.

On the whole I am disposed to hope that your first rise will be responded to in the manner first described. A do-nothing policy, though it is sometimes successful, is the outcome, in such matters, either of paralysed will or of timidity. Even if it result in triumph, it teaches nothing ; it does not so much as point a moral. It is not through your accidental gains that you become wise or capable ; wisdom or capacity comes through failure. Make the effort, then. Strike, angler, and strike home ! I adjure you thus because I cannot expect you at such a supreme moment to be cautious. The cautiousness with which some of us are born is canniness, not capacity ; a dreary gift. Caution acquired through adversity is a wholly different thing. It is a talent that you wear gracefully.

You will soon acquire it on the trout-stream. You will be less easily upset after your first smash. I shall not be astonished if you bring to bank the third or the fourth fish that rises. You will, I think, be all right if the fish is still on after the first six seconds. Its being so will indicate that when he rose you tilted the rod with sufficient promptitude and gentleness. He is firmly hooked ; nothing will

give way if you remain calm. Let him bolt when he wishes to. Except when he leaps, do not for a moment allow the line to be so loose that you cannot feel him. By and by, perhaps within quarter of an hour if he is not much over a pound, you will begin to realise that he is in some measure under your control. You note that he decreases the pace of his rush, or stops altogether, when you apply a considerate pressure. When he begins to flop fiercely on the surface your heart will go into your mouth, or into your boots; but never mind. That flopping is not a bad sign. If you resist the temptation to pull when he is engaged in it, he will begin, under tactful guidance, to come in when it is over. When almost at the landing-net, he may bolt. Let him go. He is not yet lost. He will be back soon. Again and again, when apparently as good as in the basket, he may take flight; but each flight will be less violent and less far, each return more resigned, and eventually he will be yours, and you a competent angler.

I do really think that when you have caught one good fish, without favour of a fluke from beginning to end of the act, you are entitled to consider yourself entered of the craft. The actions of all your subsequent trout will be similar.

Just beyond the deep and slowly-moving stretch

of our stream, we come upon a stretch of another kind. It is not smooth. It is troubled. The surface is a jumble of irregular waves. "Rapids," you say. It may be so; but do not make up your mind without close observation. Some of the aspects of water are deceptive. Note, for example, its appearance where one pool, narrowing towards the end, overflows into another through a channel of sand or fine gravel. There, in many a case, the water seems almost, if not quite, motionless; but there, in many a case, it is extremely quick. Similarly, jumbled water, which to the casual eye suggests rapidity of flow always, is in not a few cases comparatively slow.

In the glassy channel and in the troubled stretch alike, the explanation is to be found at the bottom. Where the bed of a stream is smooth, the surface also is smooth, even if the declivity be sharp and the flow swift. Where the bed is besprinkled by large stones, the surface, even if the declivity be slight and the flow not very swift, is wavy.

When you come upon such a place you continue casting as on the slowly-moving water. You will find that your line and flies, cast in any upstream direction, are not rushed back to you in a coil. Although the ripples tax the vigilance of your eyes, you have command of the tackle.

Water of this kind is often very good. The tremulousness of the surface gives you one of the advantages which wind confers when you are fishing on a sluggish reach or on a lake. It renders the gut less readily visible, or less a cause of suspicion, to the trout. Besides, especially in spring, such a place, perhaps because it is shallow and easily penetrated by the sun-rays, is a favourite with the fish.

There, of course, you will miss more rises than you miss on placid water. The irregular motions of the surface baffle the eyes so much that many a trout will be gone before you know he has come. Nevertheless, you will usually catch a few of the fish that rise; and you will, I think, find that the liveliness of the water adds a pleasant sense of liveliness to the sport.

Early in the year it is unwise to spend much time on the swift glides. Trout have not yet taken up quarters there. At the height of the season, however, these places should not be passed untried. By that time the trout are well-fed, vigorous, able to resist the strong current without discomposure, and, especially at nightfall and after, as mentioned in our first chapter, large and very game ones are frequently to be found in the glides. There also you should cast upstream or across.

Now we come upon a stretch that calls for different treatment. The flow is both swift and turbulent.

We must walk to the head of the stretch before beginning. That is because, on such water, instead of casting upstream, we should cast across and allow the flies to move round and down. I do not mean that you would never catch a fish by casting up. It is probable that you would now and then achieve success. An unusually gratifying success it would be, too. A trout hooked by a fly cast up into the rapids conveys a peculiar assurance that you are alert and delicately agile. This triumph, however, would be infrequent. The view of artificial flies common to fish in the broken rapids is different from that which is common to fish elsewhere. The artificial action of a downstream fly, which, as we have seen, is repellant in smooth water, is attractive in the other.

This statement will be received with wonder, perhaps with incredulity; but it is not made without consideration. It is the outcome of so much experiment that I know it to be true. I realise that it seems to be incompatible with the considerations that justify casting upstream in smooth water. These, it will be remembered, are that a fly strong enough to swim across a moderate current is an

object of suspicion to the fish, and that a fly coming down with the current in a natural manner is not so. It may be said, If a fly crossing a moderate current is suspect, can a fly crossing a stronger current seem innocent? I think it may, and I think that the possibility is explicable.

In slow water a fly that goes round and down does so slowly; a trout that sees it does not lose sight of it; the fly is seen coming, it is seen passing, it is seen going. I can imagine that in swift rough water a fly moving in the same way is never long in the vision of a trout. It goes much more quickly; flashes past each fish lying in its circular route; will be seen by each for an instant only, and, so seen, may appear to be an insect dropped upon the water at that moment.

This proposition is not wholly speculative. It can be proved that the eyes of trout, though very alert, are baffled by water in a certain condition.

Stroll along by the side of a mountain stream when it is in ordinary flow. You will see trout scuttling off to shelter while you are still two or three yards behind. Go when the stream is flooded, even if only to the extent of a three-inch or a four-inch rise. You can then, if you like, standing close by the edge, flick a fly or drop a worm straight before you into the middle of the stream and see a trout come

fearlessly to the lure. How is that? Why did not the trout bolt when you came into the lateral line of his vision? Those who fish in the lowlands, and there only, will have a ready answer. They will say that the stream was not only in flood but also discoloured, and that the discoloration prevented the trout from seeing you. That answer does not suffice. It is not a statement of fact. A mountain stream in a three-inch or a four-inch flood is not much different in colour from the same stream at summer level. It is as clear as a chalk-stream at its clearest. That is one of the reasons why I chose a mountain stream as the scene of our experiment. I think that what prevented the trout from seeing you was the extra rush of the water. Why this should be I do not exactly know; but I cannot imagine any other explanation. Lest some one should say that in time of flood the fish are eagerly on the outlook for food that has been washed into the stream, and therefore off-guard against intrusions, it must be mentioned that, whilst a flood does certainly stimulate the appetite of the trout, a fly or a worm skillfully dropped by an angler out of sight would be seized almost, if not quite, as eagerly when the stream was in ordinary, or less than ordinary, flow. The other reason why I chose a mountain stream is that the trout there are in a state of nature practi-

cally unmodified. Grouse, ptarmigan, partridges, hawks, and deer pass over them now and then ; but these passings are natural in their environment. The intrusion of an angler, which in abstract science may be considered unnatural, is much less commonplace than it is on a stream in the valley. Therefore, the mountain trout are those which show most distinctly what are the natural habits of the fish. One of these habits is not to see very far aside in rushing water. There the trout are intent exclusively on the things that are coming down over their very noses. That, I think, explains why they rise freely at flies which, cast across-stream, move swiftly round and downward. The movement is so quick that the direction is unnoticed. The lure seems to be a fly just dropped, or flashing past ; and no suspicion is aroused.

Collateral evidence in support of this theory is afforded by the fact that one never has a rise when the flies are at rest straight downstream from the point of the rod. A trout may rise at the moment when the cast has reached that position ; but the moment passed, no trout will, even if you hold them there for the remainder of the season.

On running water the fly must move in some direction if a trout is to take it. In smooth water, where the eyesight of the fish is at its best, the

movement must be with the current, or approximately so. In swift water which is rough unnaturalness of movement is frequently undetected.

Indeed, it may, I think, be said that it is a positive advantage to the angler. It is absolutely certain that in rushing water many more fish can be caught by downward casting than can be caught by casting upward. This would not be explained by suggesting that you miss more rises when casting upstream than you do when casting downstream.

That suggestion is not compatible with the fundamental doctrine of our modern school, which is that, as trout invariably lie with their heads to the current, you have more chance of hooking a risen fish above you than a risen fish below, since you pull the hook into the one and pull it away from the other. The doctrine overlooks the fact that many a fish, rising at an artificial fly, turns aside, or even downward, before seizing it; and therefore the doctrine is unsound. It is noted only in order that our study of the problem may not be vitiated by omissions.

Besides, whilst it is probable that you do miss more of the rises that come from casting upstream in rushing water than you miss when casting downstream, you do not have nearly so many rises

when casting in the first-mentioned way as you have when casting in the other. That is what we have to explain. What is the secret?

It lurks, I think, in two considerations.

In the first place, when the cast thrown upstream falls upon the water, the flies, presenting to the current a much larger surface than the gut, are the first part of your gear to be swept down; they are pushed against the gut, frequently in a coil; in that position they are not lifelike or otherwise attractive, but forbidding; thus, unless you have a rise at the moment of the flies alighting, or immediately after, you do not have a rise at all.

In the second place, trout that lie in rushing and broken water are not, I think, feeding on flies mainly. If they were, you would see them rising much more often than you do. There are quite as many insects on rushing water, or in it, as there are on or in quiet water; but if you watch closely you will find that in rushing and broken water rises at insects are comparatively few. You may surmise that this is because there are not so many trout in the rushing water as there are elsewhere; but that is not a complete solution. It is true that there are fewer trout; but it is also true that each of these few takes fewer insects. Indeed, you will often find that in a stretch of rushing and broken

water the only rises are those provoked by your own lures.

Here, if I be not mistaken, we have the main clue to the mystery. That the trout are not rising at insects borne down on the surface of the gush is probably because when trout are in such a place they are well fattened and not inclined for the nimbleness necessary if the common run of flies sweeping down are to be attended to; but now and then, they perceive, here comes a fly which is a little out of the common run. It has just dropped above their eyes; perhaps blown down by a puff of wind against the current, it seems to hang for a moment; this is an easy prey and must be taken.

Angler, it is your flies, rather than the flies of Nature, that attract the fish in rushing and broken water.

Should you doubt this assertion, go again to the mountain stream. Begin the experiment by casting upstream for a hundred yards. You will catch a few trout. Then walk another hundred yards and fish that stretch casting across and down. You will catch many trout. I shall not be astonished if you catch five times more when fishing down than you caught when fishing up.

It is said that this mode of angling is all wrong.

The accusation is on two counts. First, the mode is unscientific, and not likely to result in sport. We have dealt with that theory. Secondly, the lures are sunken and raking the stream, harrowing the trout. The answer to this charge is that flies cast across and going round and down on rushing and broken water do not sink. The current prevents them. They are practically on the surface always, and they are visibly floating often.

Until recently I was at a loss as to why rushing water should ever be frequented by large trout. The presence of very small fish seemed to constitute an easier problem. These do not oppose much surface to the pressure of the current; they are very energetic, much more so than they will be when full-grown; one can understand them to be not much incommoded by the rush. Large trout are in different case. As a rule, they take up their quarters in places where the flow is slight or even altogether arrested. There are nearly always a few in the downstream corner at the junction of a tributary with the main river; but if the tributary is coming with a gush you will notice, on looking carefully, that the fish are lying in slack water between the gush and the bank, darting into the gush now and then to seize some tid-bit and hurriedly retreat. When you come upon a large stone in the bed of

the stream you will nearly always find a good trout behind it, even if the general current is gentle. Similar fish are frequently to be found in the lee of any island in midstream, and just below any projection from the bank that breaks the force of the water without causing a whirlpool. That such places are favourite hovers can be attributed only to a certain indolence of habit on the part of the trout. They do not there find more food than they would find elsewhere; indeed, as we have seen, they have often to dart out of the havens to feed. They are not there protected in any special measure from enemies. They are protected only from the current. Why, then, if trout like repose as much as these facts indicate, do some of them, in maturity of their age and growth, and at the time of the year when they are most highly nourished, voluntarily go into the rapids?

I think I can now tell why they do so, or, at least, how they can do so with impunity.

Last autumn, from a bridge on a great river, I was watching salmon running up to the redds. The channel was coarse gravel and very clean; a few yards above the bridge, indeed, salmon were preparing spawn-beds. As I watched what was going on, my eye was caught by a strange thing. Immediately below me, where the water was running with very

great speed, a leaf, submerged, suddenly stopped, and moved about, very gently, within a space not longer or broader than two feet. Why was it not borne away? I peered into the water searchingly, and found the explanation. In the bed of the river there was a slight depression, apparently of a few inches, where the leaf was resting. Beneath the full rush of the river there was a patch of water practically still. At this very place, earlier in the year, a heavy trout had habitually lain! He had seemed to be defying the torrent; but in reality he had opposed it only when he rose to seize something near the surface. At other times he had been as snugly lodged as he could have been in the slowly-moving backwater fifty yards above.

This discovery indicated in a flash how it was that one frequently found heavy trout in rushing and broken waters. The water is broken, as we have seen, because there are large stones in it; behind many of these stones, on the bed, although the surface is swift and bubbling, there will be resting-places; in all probability there will be hollows in the bed even apart from the boulders.

When a trout in such water rises at a fly, he hardly ever misses. Almost always you feel him before seeing him. Force of habit makes you strike by raising the rod gently; but his own action and

the swift passage of the line, which is nearly taut, have between them fixed the hook.

Usually his first action is to rush downstream. I myself, to help the reel, run after him; but perhaps that is a bad habit. He is not likely to empty your reel in the first rush, and thus you are at liberty to stand, if you please, upon your dignity.

It is well to hold up the rod. If you allow the wild fish to pull it down until it is pointing at him, you lose one of the services of the instrument, which is to let you know what the strain is; you are, in fact, playing him from the reel, and are not unlikely to allow the strain to reach the stage at which the gut will snap.

On the other hand, it is not well to hold the rod so high that the point, but for the fish, would be straight above your head. In that position, as in the other wrong one, the rod loses its sensitive power to indicate what the strain is; if you incline it farther back you are almost certain to bring about a break.

The rod, held high, should also incline a little forward. It should do so even when the trout is nearly in the net or nearly drawn upon the beach; even then, when the battle seems won, a tilt backward, natural in your eager excitement, may cause a snap, and the rapidity with which a trout

regains the river, when he is free to try, is wonderful.

Playing a fish is not a mystic art founded on elaborate rules. Probably you will begin by mishap once or twice; but you will master the subject soon. A good rod, truth to tell, teaches its own uses. These are none the less delightful because they are easily learned.

Another peculiarity of broken water, either swift or moderate, is that it often yields a trout or two when the calm deeps yield none. This is partly attributable, I think, to its being comparatively shallow. When trout are in a humour to feed on flies they are poised very near the surface. When they are not in that humour they are lying on the bed of the stream. Thus, trout in the deeps, when not feeding, are so far below your fly that they may not see it. At any rate, it is a fact that when you do not find the surface of a deep stretch dimpled with rises you do not usually catch a trout there. Trout in a stretch of the other kind, even when close to the bottom, which is their habitual position, are so little removed from the surface that they cannot help seeing your lure when suddenly it is above them. Thus, when there are anglers abroad on stretches of both kinds, the fish in the broken water are subjected to temptation; while sometimes the fish

in the deeps, not seeing, are not really at that risk, but as safe as they would be if they were not being cast over at all. Clearly, then, when the trout generally are not feeding, the broken water, either swift or slow, is the stretch on which you can angle with the better hope.

CHAPTER VII

TO THE LAKE, AND BACK

Afloat—Why Stand?—Importance of the Question—Position of Trout in a Lake—In Dead Calm—A Strange Disclosure—In Time of Wind—Atmospherical and Water Currents—How Flies Should be Used on a Lake—Haunts of Trout There—A Drift Down the Middle—Daily Habits of the Trout—At Nightfall, and After.

THIS stream on which we have been fishing flows out of a lake, and to that we have now come. Either we can go forth in a boat, or fish from the shore, for an hour or so. To be afloat is preferable. The lake being very shallow at many places along the shore, you would there be obliged to spend time in searching for suitable water. Afloat, on the other hand, there need be no waste of minutes. Besides, you are not put to any disadvantage. A boat seems clumsy, a thing from which the fish, noticing it from afar, are sure to flee; but that is a misapprehension. In a boat you are better placed in relation to the game than you are on shore.

Until further reflection, this is true even if you stand. As your feet are below the level of the water, your head is lower than it is when held erect ashore.

Still, why stand?

As you will see when visiting any much-fished lake, standing is apparently deemed the proper attitude. There is an upright angler in the bow of each boat, and there is an upright angler in the stern. They would be in better positions if they were seated. Their caps would be so little above the water that their attitude would be equivalent to that of the stream angler who on all fours approaches his fish stalkingly.

This question of standing or sitting is not unimportant. Standing, you may, in certain states of weather, see more distinctly, and can cast farther; but you may be sacrificing a greater advantage. You may be scaring away fish that would soon be within range of your cast if you were seated.

Perhaps you think that, there being no stream in a lake, the trout are not, as those in a river are, all lying with their heads in one direction, and that, therefore, though you may by standing put to flight those which are looking towards you as you drift along, those which are turned away and do not see you soon are sufficient for the day.

This raises an interesting question. Is it the case



A HIGHLAND LOCH.

From a photograph by Mr. P. D. Malloch.

that trout in a lake are in the irregular dispositions which I have imagined you to assume?

Certainly there are indications suggesting that your belief is correct. Often you raise and hook a



LAKE FLIES.

(Engraved from a photograph by Mr. P. D. Malloch.)

trout at such a short distance from the boat that you are almost obliged to be assured that he cannot have been looking your way. Once, when drifting quickly, I myself, seeing a rise, cast over it instantly, and hooked the fish within a yard of the keel. It seemed impossible to believe that his outlook had

been towards the boat. Besides, it is known that in a certain state of the weather the trout actually are disposed in a go-as-you-please manner. This I discovered by accident.

In the middle of the Highlands lies a loch to which, when the wind is in the south-west, there is borne from Glasgow, a good many miles away, soot. The soot comes across-country in the clouds. When, the wind ceasing, these hang over the lake, the soot falls. It droppeth as the gentle rain from heaven, but is not otherwise Shakespearian. It becomes visible on the water. It forms a thin film on the surface. Well, out on that loch one muggy evening when the water was dead calm, I saw a strange thing. Trout were rising at small insects. Each fish, having taken an insect, dropped its head and raised its tail; and when it was down it had left its shape upon the surface. The shape was a dark space of clear water. The fish had taken with it that portion of the film against which its head and back had pushed. All round my boat the surface was marked by shapes of this kind, and these were without uniformity of direction.

There is strong reason for taking that irregularity to be exceptional. It is attributable, I think, to dead calm, which is unusual.

On the same loch there are two places where the

trout can be seen when the sun shines. Both are on the north shore. One is a sandy bay backed by a rude wall and trees; at the other place there is a high ledge of rock, also overhung by trees. The explanation of the trout being visible must be, I think, that the sunlight reflected from the stones illumines the water. Now, every time of drifting through that bay and past that ledge of rock, which are close together, I noticed that the trout were all posed in the same direction. They were lying with their heads to the breeze, looking for the insects that were being puffed along on the ripples.

This, I think, shows that the current of the external atmosphere affects the trout in a lake exactly as the current of the water affects those in a stream. In both cases the fish face the flow.

It seems clear, then, that on a lake, in wind, the less any part of you is above the water the better. All the trout look towards you. It will now be realised that if you stand erect you are in a worse pose than you are when fishing in a river downstream. On a river you can stand still; but on a lake, the boat drifting, you are every moment brought a little nearer to the fish. On a river the current of the water helps you to get the flies away; but on a lake, unless the flies are floating and catch the wind, they never go farther than

the spots at which they fall. Let us, then, be seated.

On a lake the manner of using the flies is in principle the same as that which is proper on a river. On a river, except when the flies are moving round and down, they should in pace and in direction move as nearly as possible with the current. On a lake, where there is no current, they should be allowed, as a rule, to lie, for a few seconds, where they fall. To pull them would be to impart to the lures a motion that would render them unlike realities.

Nevertheless, the flies having fallen, you must not hold the rod quite still. Even as on a river, having cast upstream, you raise the rod in order to gather in the line which the current is bearing down, on a lake you raise the rod in order to make allowance for the movement of the boat. Although you may not notice it, the boat, if there is a breeze, is going towards the place where the cast alighted; going, perhaps, quickly. Thus, in order to prevent the line from becoming slack and sinking, you must gradually raise the rod until it is erect. Only by doing so can you strike on the instant when a rise is seen; only by doing so can you be sure of feeling a rise that is not seen. The rate at which the rod is

raised should be equivalent to that at which your craft is drifting. It is easily discoverable by observation. The look of the line on the water indicates whether you are dragging your flies, or allowing them to sink unduly, or leaving them as they should be. This necessary habit of observation soon becomes instinctive, and then it involves no effort.

Instinct, indeed, has a large part to play in lake-fishing. It has to inform you about things of which on streams you gain knowledge through the eyes. On streams, in many a place, you can see the trout and what they are doing. You see, sometimes, the whole process of their rising at insects or at your flies; sometimes, again, you see that one of your flies scares them. On a lake it is only at exceptional places, such as those recently described, that you ever see the fish in the water. For the rest, in one respect, you are casting almost as it were blindfold.

On certain lakes, of which Lochleven is a striking instance, the trout often rise as plentifully as they do in streams, and very inspiring it is to see the wavy or rippled water dotted all over with the circular turbulences which they make; but these lakes are exceptional. It is, I think, their shallowness that accounts for the peculiar liveliness of their trout. Hardly any part of Lochleven, for example, is so deep that flies cannot breed in it, and

thus all over that water there is, or may be, a rise of fly every day of the season.

On other lakes, those which are deep for the most part, one does not often, except on serene evenings in spring or summer, see the trout rising plentifully. Indeed, it is not unusual to fill a basket without noticing more than a few rises apart from those at your lures.

Even on a lake of this kind, however, your action need not be wholly determined by chance. A good deal is known about its trout.

At all times of the season many of them are lying not far from the shores. There, it is true, you will raise and hook not a few that are too small to keep; but there also, now and then, you will, especially in spring, come upon good ones. The shores of islands are similarly frequented. Then, if there is in the lake any stretch which is comparatively shallow, you may be hopeful on going thither.

At the end of May and in June trout lie under trees that overhang the shore. They are waiting for caterpillars to drop upon the water, and often rise eagerly at a lure with a green body.

In summer, if you accept the guidance of the gillie, you will drift along over "the shallow and the deep." That is in many a place a well-marked line. Often, a few yards from the land, the water, which

before that deepens by inches, deepens suddenly by a good many feet. The gillie does not err in his advice. Large trout lie between the shallow and the deep. The gillie, however, might take you farther without causing you to fare worse. There is no real warrant for his belief that a drift down the middle of the lake would be time and labour lost. In a gentle wind it would probably yield you sport. As this may seem to be a random remark, I had better mention that it is not. I have frequently caught many trout when drifting down the middle of a lake. These never included a small one, and the average weight of the fish was better than that of the trout selected for keeping from among those caught along the shores.

It is astonishing that the belief touched upon, that it is useless to fish far out on an ordinary lake, survives in families that have dwelt by its shores for many generations. Perhaps the belief arose from the original discovery that, whilst trout well away from the shore do not rise at all in heavy wind, that is often the very best time for sport in the shallows near the land.

On lowland streams and on lakes alike, there is every season a period during which the trout are not very eager, in day-time, to take flies. It is not exactly the same in all regions, beginning and ending

earlier in some than it begins and ends in others; but it is definable roughly. The slack time, it may be said, is from the middle of June until nearly the middle of August. Almost any day then you will see on the water many insects unheeded by the fish. The trout have had enough of flies for a while, and are either supporting themselves on other fare or practically fasting. When the Lammas flood is falling they will begin to rise again, and they will rise well until the close of the season.

What is to be done in the weeks of their indifference will be considered by and by.

Here, in a manner more detailed than would have been opportune in Chapter I., we will note their daily habits throughout the times when they are, or may be, feeding on insects freely.

Although there sometimes is a day on which the fish hold festival without pause, as a rule they have stated meal-times. In a somewhat empirical manner, this was noted by Mr. W. C. Stewart fifty years ago. What was then known as "the time of the take," he wrote, occurs more or less, at some part of the day, throughout the season. "The leaping of the trout in all directions at once informs the angler when it commences. It sometimes happens several times during the day, but rarely lasts more

than an hour at a time, and stops as suddenly as it commences. It is only during the take that a trout can be caught in very deep water, as it is only then they are hovering near the surface on the outlook for flies. Once it is over they retire to the bottom and there lie."

These assertions are accurate in the main; but they take a good deal for granted, and leave a good deal unexplained. They assume, as Mr. Stewart expressly affirms in the context, that the time of the take is determined by, and simultaneous with, the rise of aquatic insects. This is partly true. When the March Brown or the Mayfly, for example, rises in thousands from its bed in the stream, the trout rise after it; but, as Mr. Stewart himself noted, the rise of the trout rarely lasts more than an hour. Why? The rise of fly is not as a rule so brief. Often it goes on for hours. Why do the fish take only an hour of the feast which is so generously spread? Then, it is a fact that on almost any day of the season the trout, unless a thunder-storm is coming, will now and then take artificial flies even if there is no rise of aquatic insects. Why?

In order to arrive at answers to these queries, one must, if possible, justify the statement that the trout have regular meal-times. No angler of

much experience will deny this. Let us think of what happens on any ordinary day about the middle of the year. The dawns are fresh and tempting, and very early. Especially if you have just escaped from Town, you are likely to be out with the rod before breakfast. As far as sport is concerned, you might as well be spending the time in bed. Indeed, there is no call even to hurry over the morning repast. For many hours after the sun is fully up, the trout are "off." Here and there you see them, like shadows in the sunlit water, apparently on the alert for things to seize; but, do as you will, fish you ever so daintily, they are not to be caught. Suddenly, about eleven o'clock, or a little after, one takes a fly. If you have a friend fishing somewhere else on the same water, in all probability he will report, when you meet, that he caught a trout at the same time. After that, for three hours, you and he will have trout after trout, or at least rise after rise; but at two o'clock, as a rule, sport will be over for a time. For what time? Until about five. On lakes I have often found good fortune between luncheon and tea-time; on lakes, indeed, I am inclined to believe, that is the best part of the day; but on streams it is nearly always a dull period. Unless there chances to be a rise of some particularly

attractive fly, no more than a single fish or so is to be expected.

It is implied that the trout wake up again at five, and usually that is the case; but their rise then is fitful, half-hearted, and brief. After that there is another time of nothing-to-be-done. The surface of the water may be covered with insects of much variety; but the trout are slumbering, or seem to be. They rise little at real flies, and at counterfeits not at all.

In the evening, what a change! Whenever the sun has dipped below the sky-line, be it that of a hill or that of the flat earth, every trout in the water becomes ravenous. This is said on the assumption that the weather is what may be called ordinary. If the coming of the dusk is accompanied by the coming of heavy clouds, or by the thickening of cirrus, the fish may not move at all; but if the sky remains clear, or thinly veiled, or becomes so, and the breeze is light, or gone, they will rise eagerly.

It is commonly supposed that on a trout-stream the night is better than the day; but that, I think, is a superstition. In summer, it is true, sea-trout sometimes snap bravely at gentles, real or artificial, all night; but brown-trout are more sedate in their habits. They rise very well, often splendidly, from

sundown until quite dark ; but then, as a rule, they cease.

Moonlight? It does not seem to prolong the meal-time. Some fishermen, indeed, maintain that the moon puts a stop to sport. That statement seems to need qualification. I have never contrived to make the trout rise well when the moon was in a clear sky ; but often until about midnight, in summer, I have had brisk sport when the moon was screened by thin clouds. The pastime is particularly exciting then. Casting into the light, which, though low, is clear, you can see a rise distinctly ; and at the witching hour one has a cheerful expectance that monster trout will leave their caverns and give battle such as is not to be looked for in the commonplace glare of day.

After midnight there is a period of silence. Though it is not long in summer, it seems so. The dews are strangely cold and drenching, and the minutes laggard.

What are we waiting for? The dawn ! There is not much of it, measured by time, in the middle of summer ; but just before the sun flames into sight there is half-an-hour during which the trout rise so freely that it is easy to forgive oneself for not having been to bed. Many of the largest fish are lying lazily in very shallow water at the

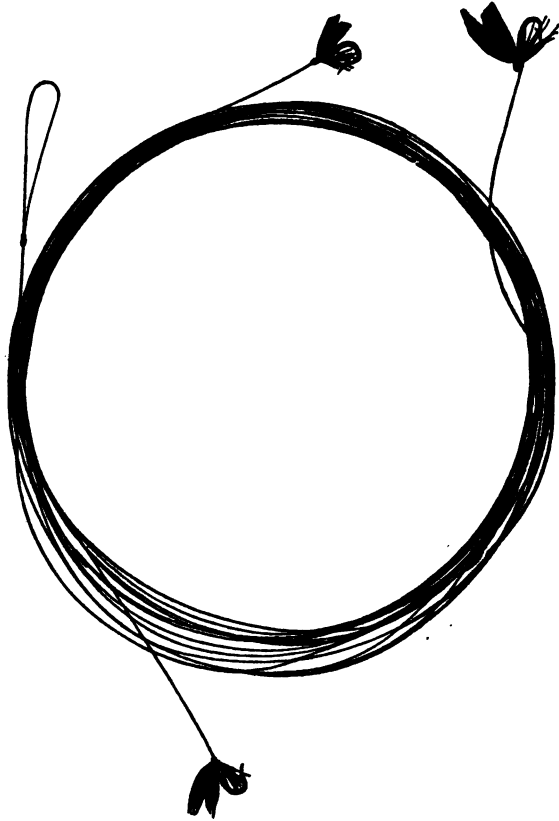
sides of the stream, ready to seize any fly that is offered.

Such is the daily routine of the river trout. It seems to show, not merely that the fish feed when the flies rise, but also that they feed at regular intervals, or, at least, are ready to rise if food, or a substitute, is to be found.

The only marked difference between the habits of lake trout and those of stream trout is that, as has been indicated, the lake trout often feed all afternoon. Frequently, indeed, beginning about eleven in the morning, the rise of the lake trout becomes faster and more furious as the time passes. It goes on until about five o'clock. Then it ceases, or begins to cease. Sometimes all the fish give over suddenly; at other times, it would seem, a few of them linger near the surface, rising in a desultory manner. It will, I think, be found that, if the weather and the wind are constant, lake-fishing is practically always at its best in the afternoon.

From the cessation of the rise until sundown there is a weary wait; but watch the surface of the water when the dusk begins, and you shall see that which will make your pulses stir again and your tired limbs feel refreshed. If the breeze has dropped, as usually happens, the whole lake will be dimpled with rises! This is the time for a cast of

midges mounted on very fine gut. It is well to



CAST OF MIDGES.

(Engraved from a model made by the Author.)

offer a variety of the minute flies. A midge is a midge all the country over; but it seems to be an

insect of various tribes, each of which is of distinctive hue or hues. At any rate, in evening lake-fishing, I have invariably found that the trout show an unmistakable preference for some particular midge. Now it is a blue-wing with hare's-ear body; then it is a woodcock-wing with hare's-ear body; anon, but rarely, it is a blue-wing with red hackle; very often it is a black gnat or simply a black hackle without wings. With these dainty lures splendid sport is to be had in a long summer evening; and rather a wonderful fact is that, although it may be that in broad daylight fish were to be found only near the shores or on other shallows, in the dusk they rise all over the lake.

When the darkness deepens the trout begin not to see the midges; at any rate, the rises become less frequent. For a brief space then a cast of day flies is often effective. No real day fly is abroad at that hour; but moths are, and it would seem that to the trout in the uncertain light a day fly and a moth are indistinguishable.

CHAPTER VIII

DRY FLY

A Wonderful Spectacle—A Rise of Fly—A Rise of Fish—The Dry-fly Man—His Modernity—His Antiquity—The Primitive Fisherman—His Means and Methods—His Modern Follower—Paraffin and another Oil—How often is there a Perfect Rise?—Nature's Unobserved Ways—The Purist's Fastidious Mind.

ANY one strolling observantly by the side of an unpolluted stream is likely to witness a wonderful act of Nature. Flies appear just above the surface of the water. A moment before nothing was to be seen; now there they are! The spectacle is puzzling. It makes one think of the Indian who by strange arts can cause you to see a shrub where no shrub is; but it is not a deception. The flies are real. They are multiplying, too. The swarm thickens as you gaze. You cannot note the coming of the new insects or distinguish them among the others; but you know that they must be. At first there were only a few

flies, perhaps from seven to twelve; now there are scores in the living cloud, which is expanding. Where have they come from? Whence are they coming? In theory, of course, one knows all about them. They are merely "a rise of fly." Last year insects laid eggs among the reeds, or on the stones, or in the mud, at this part of the stream; and the eggs, after gradual developments through stages known to the entomologist by foreign names, have taken to themselves wings and perfectness. That explanation, however, is too matter-of-fact for the delicate marvel we are witnessing. If these insects were born in the water, they must be coming out of the water; but are they? Peer as carefully as you may, you cannot see them coming out. You cannot detect the emergence of a single insect. All you are sure of is that where flies were not . . . now they are. They have come out of the water, somehow, just as snowflakes occasionally come out of the blue sky. The snowflakes seem to spring into being out of nothingness. So do the aquatic flies. It may be that, instead of rising directly through the water well out in the stream, they have been, and are, crawling up the bank, and taking wing from the grass above the brim. Perhaps; but one cannot find them in the grass, either. Mysteriously they appear, fluttering in the air.

Even when only an instant old, the insects seem quite at home. They have taken to the air as naturally as dabchicks take to the water. If you came upon them just after completion of the rise you would think that they had been in possession of their little space for a long time. They are active on the wing; but there is no fuss among them, no disorder. Only some creatures have completeness of harmony with the universe immediately after birth. Lambs have. They play in fearlessness, seem to know all the country round, and look you in the face as with a quizzical familiarity. Red deer and foxes, for example, are different. Even when these are constrained or petted into tameness, their eyes never lose the expression of curiosity, seeming to say, "What's it all about—this world?" Our aquatic flies, I think, are like the lambs. In suddenly coming into visible being they obviously feel that life has nothing more to teach. They are at home in the airy world the moment they enter. Why not? They have but a few hours to live. When we think of this, Nature seems rather pitiless. Why give only an hour or two of joy in the perfumed summer to creatures that, in the water, have taken a year to grow? Some of them, indeed, such as the Mayfly, have been two years preparing for maturity. This seems to imply waste or cruelty; but, of course,

the seeming is deceptive. For many months before they appear in the upper air, certain aquatic insects are very much alive. They rout about, foraging, and they have enemies, such as fish, to escape from. They have sentient life, and to all appearance interest in life, and therefore, doubtless, joy of life.

By and by, if you watch, you will see that some of the flies go down to the water again. It may be that they just touch the surface and rise a few inches, repeating this action quickly; it may be that they go in altogether, disappearing as mysteriously as they came. Whether they merely bob up and down upon the water or dive into it depends upon their species. In either case they are females laying eggs. The process is exhausting; and ere long many of the females, together with many of the males, are floating rather helplessly down the stream. If they are of a kind well relished by the trout, the observer will be rewarded by the spectacle of nature suddenly astir in another mode. The water is dimpled with expanding rings. All the fish in the stream, it would appear, are rising!

The observer does not stroll very far before coming upon a person whose mien denotes excitement. A rod lies beside him on the bank. Perhaps he is scrutinising the stream through a field-glass; perhaps

he is endeavouring to catch something in a small-meshed net. He is anxious to discover what insect it is that has brought the trout to the rise. When he has made sure, he will put on his cast an effigy.

He is a Dry-fly Man. Any other angler, without being extra-sec, would, it is true, seek for a lure to match the fly on the water; but it is as we say. This one is known to us. He is as dry as the Southern School can make him. He is of austere countenance. He does not smile with ease. He takes more gracefully to frowns. The fact is, this is a sorrowing Werther burdened by the errors of other men. Have a care! Should he see damp flies on your cast and good trout in your creel, it is not the compliments of the season you will receive. If you are not big enough to punch his nose, he will tell you that you are little better than a poacher. Even if your stature be such as counsels caution, you shall not escape him. His pen is mightier than his fist. It will scourge you in public print next week. This person is not to be challenged rashly. Let us make peace while we are in the way with him, lest worse befall. Let us do him all possible honour. He has three claims to consideration.

In the first place, the Dry-fly Man is modern.

He is in a fashion that has recently become more assured and exultant from year to year. The cult of *Æstheticism* was no more a reproach to the humble than the cult of Dryflying is. The *Æsthete* was now elate and then censorious. So is the Dryflier. Conscious of being the embodiment of an ideal, he is at times oblivious of all else and proudly silent; but at other times he becomes human and speaks things that are not smooth. He has established a new standard of taste. All who do not conform are outside the pale of sportsmanship. They are hardly worth noticing, to be sure; but there they are, and it is well that they should be thought of now and then. The sway of the cult is unquestioned. Practically all the journals of sport are fervent adherents, sighing constantly in its service, and on occasion singing with revering seemliness. Very few laymen dare to stay outside the pale. That would be equivalent to social ostracism self-imposed. Nearly all of them are within. At any rate, nearly all of them are half-in, half-out. A dry fly does not invariably fulfil its design. Sometimes it obeys the laws of matter by going below, and often, when that miscarriage happens, there is a trout on when it comes up again. Besides, there being a mahatma of the Old Adam even in the most rarified of men, it is natural that the humbler dis-

ciples, the weaker brethren, who are nine anglers in ten, sometimes, when no one is looking on, wilfully help the fly to dip. Of course, they do not, by speech or pen, publish the lapse, which would be treason to the ideal. Good works without faith are naught; but faith without bad works brazenly avowed covers a multitude of transgressions. The half-in-half-outers are with Us in spirit though paraffin and the flesh are weak. That is to say, the Dry Fly is supreme as a symbol of modern taste.

In the second place, the Dry-fly Man is thoroughly ancient. He does not know it; but he is.

What was the lure of the first man who cast angle in a brook? A worm? It cannot have been that. The first angler would not know that the trout fed on worms. He would not know that there were any worms coming down. A worm in running water is not easily seen. Even now, using the best instrument to be found at the optician's, you might peer into a stream for months without seeing a worm. Was it a gentle that the first angler used? No: it cannot have been a gentle: how could he imagine that such a noisome creature, so foreign to the pure stream, would be attractive to the clean-living fish? Was it a creeper? That cannot be

thought. It is conceivable that at his morning bath, which would be in the stream, the man did notice creepers; but certainly he saw nothing to suggest that they would be lures. Was it, then, a minnow? Surely not. Knowing that certain tribes of his own race were cannibals, he might, perhaps, suspect the trout, harmless though it looked, to be capable of eating its own kind, which minnows would appear to be; but it is not likely that he had seen a trout bolting a minnow, and thus it is impossible to suppose that the first angler began by spinning or by dropping a minnow. How, then, did he act?

In order to arrive at certitude, we have merely to recall the opening passage of this chapter. The first angler saw the flies and the trout taking them. That vision, and none other, gave him the first inkling as to the food of the fish. It agitated him. It shadowed forth the potency and the promise of ampler fare for himself. Also it suggested a new sport that would be lively and delightful. His pulse rose. The spirit of the chase was astir. He rushed to the copse near by, and cut a sapling, the largest he could find; that was to be his rod. He hastened home, bade a minion find for him a long string, and ran to the stable, where he tore many hairs from the offended stallion's tail; thus were provided the line and the cast. Then he entered the poultry-

yard, looked wildly over the fowls, seized the most resplendent cock, and wrung its neck.

What did he do next?

We can call up the scene in perfect detail. In the mind's eye we behold him lashing a strand of hair to such implement, bent, as then did duty for a pin, and tying on a small feather from the cock. "This is a bit big," he said to himself as he gazed upon the completed work, held out at arm's length; "but what matter? The trout like flies very much. The bigger the better, perhaps. Who knows?" The fly was clumsy. It was not easy at that time to manage the feather so as to have wings. There was no fly-tying implement then. Thus, the lure was not exactly a Redspinner such as would now be approved by Mr. Senior. It was more like a Red Palmer. Besides being big, it was bushy. That was by intention. "I think it will float," he said, meditatively, "just as the real flies do." Soon the whole apparatus was in trig commission, and, having quaffed a bowl of wassail, out set the first angler for the water.

How did he approach the trout? Did he affront them? Did he cast downstream? Ah, no! This primeval person had an eye better than that of the unseeing rustic. He never would have thought of angling if he had not been exceptionally gifted.

Having abundance of leisure, he had from boyhood been much about the water, snaring rabbits on the banks ; he was familiar with the ways of many wild creatures ; and he had observed that, whilst the fish saw him from a good way off, and on seeing became alarmed, when he was strolling downstream, they were not so sharp when he was going up. He approached the trout, therefore, from below. He stalked them from behind their tails.

We can see him as he went. He did not tarry at broken water, on which the marks made by rising trout were as quickly fleeting as the snowflake, which is a moment seen, then gone for ever. When he came to such a place he walked on, until he reached a glide or other flat. There he resumed, creeping stealthily, stealthily, until he was within range of a rise ; then down dropped the Palmer just before the fish's nose.

Could there in any science be a more astonishing continuity than that which marks the principles of the most ancient angler and those of the most modern ? These are identical from point to point. The exquisite fisherman to-day does exactly as his rude forefather did. He uses only one fly at a time, a fly which in some cases is slightly larger than the insect represented, and, in order that it may float, heavily busked. He moves upstream. He

casts upon smooth water only, missing the rough stretches; he pays heed only to rising trout, and these he stalks.

Does any one claim that we moderns have improved upon the ancients in respect that we have discovered the use of certain unguents in keeping the fly on the surface? Vain plea! Paraffin in that relation is no more than a substitute for another oil. When the ancient wished to make sure of his fly, he placed it, flat, in his armpit, pressing it there; and it came forth anointed. Mr. J. A. Harvie-Brown, that learned antiquary, has stated, in one of his contributions to *The Fishing Gazette*, that this custom, handed down from time immemorial, was still alive, in our own land, well into the nineteenth century.

In the third place, the Dry-fly Man is of exemplary fastidiousness. His is a blameless pastime. It is practised in Hampshire and other old-fashioned counties where the agricultural land is not much drained. There, by the gentle chalk-streams, which are always brimming, the Dryflier calmly goes his flower-strewn way. Often, if he be not clad in waterproof trousers and walking in the water, he is crawling on knees and elbows along the bank. That is his favourite attitude in the illuminated texts. The primitive angler, as we have seen, cast only at

rising fish. The modern angler, he who, by himself as well as by common consent, is called the Purist, is strongly disposed to regard any other casting as a breach of true tradition. He looks askance at those who would mitigate purism to the extent of aiming at a place where a trout might be when there is no trout showing. In this chapter, then, we must not give any account of what some Dryfliers do when the trout are down. "Fishing the stream" is too much like the method of those whose flies are wet to be more than mentioned here. If not heterodox, it is latitudinarian.

"Fishing the rise" is the only act in strict accordance with the faith. Success in it is peculiarly gratifying. Lightly falls the fly; down it floats a foot or a few feet; and sometimes it is seen to disappear in the mouth of a trout. All this is very pleasant. In fishing of another kind there is more than meets the eye; but in the practice of the Purist the eye meets everything that happens. Thus, sight being the most rapidly communicative of the senses, it is held that the dry-fly method is more thrilling than any other. That may be so; but there are thoughts which oblige us to change for a few minutes to a minor key in chanting the praises of the vogue.

One knows that when Nature produces a com-

pletely successful rise of certain aquatic insects, the whole brood, or practically the whole, having emerged from the water, a dry fly has a better chance than a fly that dips; and one likes the lure to be floating when that state of affairs has evidently come about. The misfortune is that the occasion is very rare. Unless the rise is perfect in the sense that there are not some of the insects being carried downstream below the surface, the trout do not with one accord feed only on the floating or the fluttering flies; they are then just as likely to be attracted by a lure that dips as by a lure that sails. How often in a season is there a perfect rise? It is impossible to tell, since no man, howsoever carefully he may have noted the superficial phenomena of a rise, has with equal vigilance studied the phenomena below the surface; but there is abundant cause for believing that, as has been said, the times are extremely few. Nature is prolific, seemingly spendthrift; and it is probable that the complete emergence of a brood of insects is as exceptional as the complete survival to maturity of a brood of trout. We have more than abstract reason for that understanding. Season after season, as the faithful pages of *The Field* show, the Dry-fly Man finds a melancholy marvel frequently intervening in his tranquil days of happiness. He has been to his chalk-stream;

and is back in Town again, lamenting the weather. Throughout his few days off there was no rise of fly, and therefore no rise of trout. There should have been on the water Blue Duns, Olive Duns, Red-spinners, Governors, Sandflies, Grannoms, Gravel-beds; yet there was hardly a single insect about. Our friend's off-hand explanation is to the effect that cold had delayed the "hatching." As the flies' eggs are hatched when the grubs appear, that word is not correct; but it is convenient. The meaning is clear. Is the thought which it contains acceptable? Wary students of the subject will hesitate. An egg is an egg, even when it is the very minute one of an insect, and eggs have fixed periods of development. If the young creature does not come out within a certain time, it does not come out at all. Presumably the grubs also have fixed periods of development. When due, therefore, the young of the aquatic insects must either be dead or rising.

Do they die? Is the water of a stream ever so exceedingly cold for a short time, or below the average temperature for a time so long, that the eggs or the grubs succumb? One cannot think so. If cold killed the eggs or the grubs, the insects would become extinct. "They do, in some places," it may be said: "the Mayfly has disappeared on the

Wharfe and on other waters." It is true that the Mayfly has disappeared on many a stream ; but I do not think that the misfortune can be attributed to unusual chills. The Mayfly, which looks so fragile that a puff of east wind might be expected to shrivel it, is in reality a singularly hardy native. Its eggs take two years to become flies. The immature insects have to undergo the rigours of two winters. Is it to be supposed that the embryo Mayfly, which merrily survives so much, is to wither away in the comparatively unimportant bleakness of the spring ? That cannot be supposed. Local disappearances of the Mayfly come from causes with which the climate has nothing to do. They are the result of pollutions. Poisonous or slimy refuse settles upon the bed of the streams, and the immature lives are ended.

This reasoning about the Mayfly, it is probable, holds good as regards all other aquatic insects, or nearly all. "Then why," our friend asks impatiently, "was there no fly of any kind to be seen when I was fishing ? If the eggs or the grubs don't die, they must, as you say, attain complete development, and that within a definite time. If they 'hatch out,' why are the insects invisible ?" That brings us to a point of moment in relation to the subject of this chapter.

The "hatched-out" insects were invisible because they were not looked for in the right place.

Whilst it seems to be a fact that no temperature is so low as to nip out the life in the embryos, even a slightly unseasonable chill is sufficient to have a wonderful effect at the moment when the insects are emerging from the chrysalis state. Had he peered into the water, instead of being content to contemplate in sorrow the untenanted surface only, our angler would have had a strange spectacle. He would have seen dozens of flies rising from the bottom, or crawling up the stalks of sedge, or hovering over weeds, but not reaching the surface of the stream. At the moment of what may be called full birth, the creatures were, the water being very cold, numbed, enfeebled, unable to expand their wings and escape into the upper air; they were being carried downstream, under the surface, in myriads; and the trout, we may be sure, were feeding upon them diligently. If he had used wet flies then, artificial flies in imitation of the numbed and submerged insects, the angler might have had a heavy basket.

The influences of weather on insects will be more fully discussed in other chapters.

Fishermen are wont to speak of certain streams, among them those in Hampshire and some in the

Home Counties, as being dry-fly waters, and of certain others, notably those of Wales and the Highlands, as being wet-fly waters. These are rough-and-ready categories. No stream is either a wet-fly or a dry-fly water from topographical considerations. Any stream is a dry-fly water at one time and a wet-fly water at another. It is a wet-fly water when the trout are feeding on insects under the surface, which, from the cause we have touched upon, and in respect that most female aquatic flies have to go down in order to lay their eggs, is much more often than is generally known. It is a dry-fly water at other times.

These times are so rare that the Dry-fly Man has much leisure for contemplation. What is he to do when the trout are not moving as they should be? Resisting the temptation to wipe off the paraffin and let his fly seem natural, he reposes among the daisies and the buttercups and finds phrases for lofty thoughts. He has been thus engaged so often that he has become a Lilly of the valley through which the chalk-stream murmurs. His diction is exalted. Hark! "After a bright and hot day during the summer months, the sub-imago stage of life will be assumed by many water insects, while innumerable imago forms of insect life will float or soar through the ambient air in the

delicate mazes of their bridal dance." That shows the Purist in the mood of poesy. He has other moods equally beyond the reach of the illiterate and the meek. These speak of flies by common names; but think of what that usage leads to. It necessitates occasional utterance of such words as "Jenny Spinner," "Yellow Sally," and "Cow Dung." How does the Purist deal with the deplorable necessity of realising that there are insects so ungenteel? Why, just as he says "sub-imago" for "half-fledged" and "pupæ" for "grubs," thus evading notions that are manifestly common, he speaks of "the Ephemeridæ," "the Trichoptera," "the Perlidæ," "the Sialidæ," "the Diptera," the "Notonectidæ," and the "Vulgata" of various species, thereby relieving us from occasion to shudder at the damnable grossness of the English tongue. These beautiful words, in which the graduates of the Southern School find grave delight, repeating them in all their books, are an incitement to high thinking. What they have to do with plain fishing no mortal man can tell. Only a churl would be untouched by them on that account. The mind of the Purist, when not minatory, soars into regions beyond our ken.

CHAPTER IX

INFLUENCES OF THE WEATHER

On a Perthshire Loch—A Blank Day—Change of Weather—
Miniature Tornado—A Brisk Half-hour—Renewal of the
Storm—Weather and Moods of Trout—Before Thunder
—Eminent Naturalist's Suggestion—Oxygen—Are Rises
of Fly Punctual?—Two Kinds of Thunderstorm—Char
and Eels in Sultry Weather—Insects, Sheep, and Cattle
—Salmon—Worms—Their Sensitiveness strangely Illus-
trated—Thrush, Blackbird, and Starling—Carbonic-acid
Gas—Certain Winds—Afternoon Langour—The Anti-
Cyclonic State—The Naturalist's Summing-up.

The first visit to a water has a peculiar interest. It revives one's curiosity as to the habits of trout. On going to a familiar lake or stream one is prepared to accept good sport, or poor sport, or none at all, in an uninquiring spirit; but one goes to an unfamiliar water in a mood of eager interest. Thus it was with lively and pleasing concern that I found myself on a certain water in Perthshire. I had often heard and sometimes read about the beauty of the loch and

the brave sport which it is capable of yielding. A basket of fifty trout of fair size had been treated as not uncommon, and I had heard that there were always very large fish ready to snap at a minnow. Certainly it is a very attractive water. Lying between ranges of lofty hills, it is away from the bustle of civilisation. There is a road on the north shore; but that extends only to a farm-house two miles beyond the head of the loch, which, therefore, is practically unknown to all save the farmer, the few neighbouring landowners, and the sporting tenants. It is about five miles long, and is connected by a short channel with another loch which for one mile fills the valley to the west. Indeed, a three-foot flood obliterates the intervening meadow and makes the two lochs one.

Our first day was a blank. When we set out on the water there was a slight ripple; but it looked ominously undecided, and it died away before we had been an hour afloat. All that day there was no real wind at all. This could be seen from a survey of the sky, which was covered by a stationary cloud; or by a glance at the mountains, on which wisps of grey mist hung motionless. The slight ripple had been caused by surface currents of atmosphere wandering hither and thither. We were rather dejected, when the loch became dead calm, at

its apparent lifelessness. Scarcely a rise was to be seen. Had I had no more than my own experience to guide me, I might have been tempted to think that the repute of the loch was fabulous; but our host and hostess had prepared us for disappointment. The trout, they had said, always lay low when there was a "heavy atmosphere."

Was our visit, then, to be a complete failure as regarded fishing? Was there to be no break in the weather? This we asked ourselves as we laid down the rods in order to take our mid-day meal. The barometer, when we left in the morning, had not been encouraging. The mercury had been high and steady. Soon, however, good cheer came in striking guise. Suddenly a strange little tumult arose upon the water about fifty yards away. It was a circular commotion, and it advanced. It was coming towards us. It spun. It seemed to be gathering velocity. We guessed what it was, and knew it to be a dangerous though minute storm; but we were too much fascinated to think of getting out of its way. Besides, what was its way? It might sheer off at any moment. An attempt to evade it would be like trying to run from the lightning. Therefore, we sat stoically still. The whirlwind struck us amidships. The boat, vibrating from stem to stern, was slightly lifted, and my cap flew high in the air. Obviously

it was now time to go. The forecast from the Meteorological Office, which had been read to us at breakfast, was evidently more to be trusted than the weather-glass. It had mentioned a cyclonic depression and local thunder-showers. We were amid the conditions that give rise to mishaps on Highland lochs, and one tornado, even in miniature, was enough for the time being.

Rain had begun before we reached the house, and while we sat at dinner we heard the sounds of deluge. The mercury in the weather-glass had gone down with a run. It actually was half an inch lower than it had been in the morning. Twelve hours afterwards, at breakfast-time, it was still lower; but there were signs of recovery outside. Broken clouds were scudding before a brisk west wind. Large patches of sunlight flickered on the hills, down which many burns were gushing. The loch had risen at least two feet, and was still rising. Surely we should have sport now!

We were off to the head of the second loch with as little delay as possible. On the way thither we hooked and landed a good trout on a fly trailed in the wake of the boat. The promise which this event contained seemed like to be fulfilled. Sport was pretty good during the first half-hour of the first drift. The rises were not very frequent; but every

fish that came at a fly came with a splendid dash. Scarcely one was missed. Even when we were a little late in striking, as was to be expected in rough water, the trout was fast. Often, amid similar conditions, I have witnessed the same thing. When a lake or a stream is refreshed by flood and wind there is no "rising short." The fish are thoroughly waked up, joyous in appetite, and reckless in impulse.

They do not, however, regard all flies indifferently. Even in the wildest flood and storm, they show a distinct preference for flies dressed in imitation of the insects which are on the water or due there. On our second day on the lochs it soon became clear that the Soldier Palmer was the most attractive lure, and we were thinking of substituting Soldier Palmers for less effective flies. Then suddenly there was another wonder of the weather.

The west wind became fitful. Instead of continuing light and bright and steady, it came in violent gusts from out of a quickly-blackening cloud which was gathering on the hilly horizon. Between the gusts there was no wind at all and the racing waves subsided into a jumble. Even then the trout might have gone on rising well had the storm passed its height; but there were signs that the worst was still to come. A high mountain just behind us



AN ANXIOUS MOMENT.

From a photograph by Mr. P. D. Malloch.

to the south-west was capped in a smoky cloud which no wind shook, and from the east a foam-flecked cats-paw was advancing rapidly.

In a few minutes the whole loch was in a turmoil. The gusts from the west continued; but they were held up by equally strong gusts coming from the north down a glen, and swerving westward.

It was impossible to find a clear drift anywhere. No sooner did we cast our flies with one slant of wind than a blast blew them back in our faces or behind. Then the rain began again; it became heavier and heavier until the very conflict of the winds was stilled. The burns on the mountain-sides swelled visibly, extending higher and higher, until the white streaks began at the remotest visible places; and we could hear the expanding roar of the river in the glen.

Despite all discomforts, we should have gone on fishing had there been any hope; but we knew quite well that the trout had gone down, and that they would stay down until a definitive wind, with a bearing to the north-west, should show that the centre of the cyclone had passed.

This little episode is recalled in order that we may be prepared by experience to deliberate on the weather. In setting it down, as will have been noted,

I have taken certain atmospherical conditions as having well-known influences on the trout; but, while realising what these influences are, it is desirable to discover, if we can, why they are. The more you fish, the more does this problem pique you.

An eminent naturalist with whom I was discussing it touched upon the familiar fact that trout never rise freely during the time of languorous atmosphere which precedes a thunderstorm. I myself had thought that the cause of the fish lying low was the lack of oxygen in the water. That, indeed, was one of the few absolute convictions at which I had been able to arrive in studying the phenomena of the sport. I recited an incident that had seemed conclusive warrant for the belief. My statement was that I had been out on a lake catching trout with which to stock a hatchery; that by-and-by the fish, gathered in a pail, had showed signs of dying, a few of them having turned almost upon their backs; that then the boatman had seized the bailing-pan, filled it, and, holding his hand high, plunged the fresh water into the pail; and that all the trout had immediately begun to revive. Was not that clear proof that they had become languid from exhaustion of the oxygen? Of course, there could never be the same lack of oxygen in lake or stream that there had

been in the pail, which had become overcrowded; but surely the insufficiency in the atmosphere for some time before a thunderstorm, which affected human beings and cattle, would affect trout also?

My learned friend thoughtfully shook his head. "Do you know," he asked, "how much oxygen a fish needs to keep him alive and comfortable?"

"I understand that it is not much. Dr. Günther, if I remember rightly, says that the quantity of oxygen that a man needs to keep his blood pure, vitality up to the natural pitch, is fifty thousand times more than suffices for a tench."

"Doesn't that rather knock your theory on the head? There would have to be a very great exhaustion of the natural atmosphere before a fish could feel it."

"I'm not so sure of that," said I. "The oxygen we are speaking about is not merely that which is a chemical part of water. It is oxygen drawn from the upper air and mingled with the water. You must bear that in mind. Also you must remember what marvellous effects are produced in human beings by very minute changes in the state of the atmosphere. The essential chemical difference between the air of Pall Mall and the air of Cowes is almost imperceptible; yet when you go to Cowes after being long in London you feel a new man immediately. Nature

is a subtle magician. She gains her effects by means amazingly obscure."

The naturalist was still unshaken. "I would," he said, "admit your theory to be conceivably correct if it were not that I have one of my own. Yours seems to fall in with the facts all right; but so does mine. Mine simply is that the reason why trout don't rise freely for an hour or two hours before thunder, or even for a longer time, is that there are then no flies on the water, or very few. Usually there is great heat before a thunderstorm. The heat accelerates the development of the insect grubs; the flies flutter up, from the bed of the stream and the reeds by the side, prematurely. Thus, before thunder there is a lapse in the orderly rises of fly. Nature, for a short time, is in advance of herself. She has exhausted her stores."

That was a striking theory. It seemed so reasonable that at first I was disposed to acquiesce; but a few moments' thought showed that it involved some questionable assertions.

"Are you sure about the insect grubs?" I asked. "I should have imagined that the perfect insects are bound to come out at a definite time after the eggs were laid. Are you sure that the period is lengthened or shortened according to the weather?"

"I'm not quite sure about all the insects," the

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naturalist answered. "There's the March Brown, for example. Neither the eggs nor the grubs of that insect seem to be affected by cold, however intense: March Browns always, I think, come out when they are due. But I do believe that in most other cases the 'hatching-out' is retarded by cold. How else can you account for fishermen living away from their streams having to be telegraphed to when the Mayfly is up? If the weather had nothing to do with the matter, the day of the rising of the Mayfly would be quite regular, just like the coming of Christmas."

"Yes: that's evident," I said; "but I am still puzzled. Often the period of close warm weather that precedes a thunderstorm is very short. Sometimes, indeed, thunder comes without any such warning."

"When it does the trout are not affected. Thunderstorms are of two kinds. There is the thunder that comes in the middle of a tempest or a gale. That, which is rather rare, is produced by conditions quite different from those which bring about an ordinary thunderstorm. It is not preceded or accompanied by high temperature, and its imminence does not disturb your sport. But the ordinary thunderstorm is undoubtedly, as a rule, the culmination of a protracted process in nature, a process of which the most prominent

symptom is close heat. Don't you think it quite likely that this unusual warmth, which lasts for hours, sometimes even for days, may hasten the coming-out of the flies?"

"But char rise in sultry weather!"

"I expected you to mention that," said the naturalist. "I myself have noticed that char rise in sultry weather. In fact, I've never found them rising freely at any other time. Char, like eels, bestir themselves when there's thunder coming. But what are they rising at? They take your flies, I know; but I question whether they take any others. I think there are very few others to take. That, in short, is just my point."

I tried hard to remember the state of nature before an ordinary thunderstorm, and again found cause to think that my friend was in the right. I called to mind the aspects of a lake on which I often fish. In fresh weather the water ripples and sparkles; insects flutter about, especially near the shores; the trout rise excitingly many hours a-day; all nature is alive and alert. When thunder is coming, the lake, save in patches here and there, where struck by erratic puffs of wind, is still and dull; sheep and cattle are huddled, motionless, in corners of the fields; there is no twitter of birds; there is no fluttering of insects!

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Suddenly, however, after feeling that the naturalist was undoubtedly right, I found a new idea suggesting itself. I would use it cautiously, in cross-examining method.

"I understand," said I, "that sometimes, when the temperature is unusually low, the aquatic insects do really 'hatch out' in due course, but that, being enfeebled by the cold, they cannot reach the surface?"

"That is so," said my friend. "It is on such occasions that the wet fly is astonishingly successful even on what are known as dry-fly waters. Feeding on the insects that are being carried downstream below the surface, the trout take sunken artificial flies also."

"Well, then, as it is certain that a temperature unusually low prevents a 'hatching-out' in the complete sense, is it not conceivable that a temperature unusually high may have the same effect?"

"Dear me! I never thought of that," the naturalist answered. "Why, yes: it is conceivable. In fact, it is probable. The development of the creatures may be arrested, and left incomplete, because the water is too warm. But doesn't that come to the same thing as regards why trout don't rise before thunder?"

"Not quite, I think. All living creatures, except

the eel and the char, are torpid before the storm—sheep, cattle, bees, and birds—— ”

“ And except salmon,” interjected the naturalist.

“ Do salmon rise in sultry weather ? ”

“ O yes : often ; but, as salmon certainly do not usually rise at insects, we may leave them out of account.”

“ What I was going to say was this : Although, in the general stagnation of nature, most living creatures on the land are dull and inert before an ordinary thunderstorm, they are not dead or dying. They wake up soon after the storm has burst—whenever the lightning has rectified the atmosphere. Now, may not the immature insects in the water be in the same state—inert before the storm, but lively whenever it has done its work ? That would account for the trout rising almost immediately after the first flash—they often do, you know ? ”

“ Yes : many a fine basket have I made in a thunderstorm.”

“ But here’s a singular thing,” I went on, as he ruminated happily on the purely sporting aspects of the subject : “ When the atmosphere is working up to thunder, the trout, which won’t look at artificial flies, won’t look at worms either. Now, what does that show ? ”

“ You, of course, think it shows that they won’t

take anything; but I am not so sure. Perhaps the explanation of their not taking your worm is that there is not at the time any natural supply of worms in the water. Yours may be a solitary apparition, and therefore suspect."

This astonished me. "Do you mean," I asked, "that the state of the atmosphere which prevents the insects from 'hatching-out' properly may also prevent the worms from getting into the stream?"

"I do," said the naturalist. "Why not? Apparently you don't know the worm. He is a very interesting fellow. If you think he has no regular instincts and remarkable habits, that must be because you have never studied him. I will give you a story about worms—true. A friend told me there was a great plague of them in his bowling-green. The turf was covered with their casts, and that made the game very unsatisfactory. He had tried soot and brine; but they would not be killed. 'Take me to your bowling-green,' said I; and we went. The whole surface of the lawn was thickly dotted with worm-casts. 'What do you think of that?' said he, with a sort of pride at the great extent of his trouble. 'O, nothing,' said I. 'Within three minutes I could make every worm within a radius of a yard from my feet come up to be captured.' 'How?' he asked, astonished. 'By

a very simple means—incantation. Just turn your back to me, and look round when I cease whistling.' When he had turned I whistled in low tones a wild and melancholy ditty, improvised for the occasion; and when he looked round, it was to behold many scores of alarmed worms wriggling on the turf. 'So, you see,' I remarked, 'it is quite easy to clear your bowling-green without cutting a single sod.' My friend went nearly out of his mind with fright. He was thinking that the Black Arts were no superstition. I had great difficulty in reassuring him. He smiled again only when I had shown him the trick."

"What was it?"

"You too seem rather scared," said the naturalist, laughing. "Compose yourself. As we were passing the tool-house I had picked up a three-pronged garden fork, which I carried to the lawn in an innocent, careless manner. When my friend had turned I pushed the fork into the turf, and while whistling I moved the implement quickly to and fro, gently shaking the soil. When all the worms had come up, I pulled the fork out, and obliterated, with pressure from my boot, the marks that the prongs had made."

The naturalist was so much delighted over his recollection of the affair that he was forgetting our argument.

"Well?" I said.

"Ah!" he answered, bringing his mind back to our subject. "Don't you see that worms are exceedingly sensitive?"

"They came up because of the tremor in the soil," I answered; "but that was not a small thing. It must have seemed an earthquake to the worms. We need not consider them exceedingly sensitive merely because they are alarmed by violence."

"No," said my friend; "but it is an extreme case I have been citing. If a small bird played a tattoo with its bill upon a lawn, you would not call that violence—would you?"

I admitted that I should not.

"Well," the naturalist went on, "thrushes, black-birds, and starlings can do with their beaks what I did with the garden fork. You will see them doing it if you watch. They alight where they think the worms may be, dab at the ground quickly, and then, cocking their heads on one side, look at the place eagerly—listening, too, I think. If a worm doesn't come up, they conclude that there is none there, and hop off to try elsewhere."

"Do the worms respond to the tapping?"

"O, yes: they come up, and are gobbled by the birds. Now, what I ask you to consider is this: Worms being so nervous that they rush out of the

earth when they feel the very minute tremor caused by the tapping of a little bird's bill, is it not easily conceivable that during the period of stillness which usually precedes thunder there may be at work some influence of Nature to keep them down?"

"Easily," I answered, much struck. "And, of course, if a stream is not getting its usual supply of worms, the trout will probably be disinclined to look at the solitary ones thrown in by anglers. That is what you mean, I think?"

"Exactly. We must be very wary in dogmatizing about the ways of the trout; but it is undoubtedly a fact that the fish hardly ever show much interest in what the angler offers unless Nature is at the same time providing supplies of the same thing—or the thing of which the lure is an imitation. And it is quite possible, I imagine, that during the dull time in which the atmosphere is fermenting towards an outburst the worms inhabiting the banks of a stream, instead of being on or near the surface and liable to drop down or to be washed down, have gone far in."

I acknowledged this possibility, and mentioned what a little time before had been passing through my mind, that in the still time before thunder birds and insects are silent, and cattle huddled into corners.

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"That is so," said the naturalist; "but there is more than that. The cattle have ceased to graze! Have you noticed that?"

"I think I have," I answered, after reflecting; "and the fact seems to throw a new light on the fishing problem. It is not for want of fodder that the cattle have ceased to graze! The pasture is still there, and surely as good as ever?"

I felt this to be an unanswerable remark; but the naturalist was not impressed.

"Yes," he said: "the pasture is still there; but I don't think you should be sure that it is as good as ever. Growing flowers give off carbonic-acid gas in the night, you know; which is why they should not be kept in your house then; and I think that in the pre-thunder state of atmosphere they may give it off during the day also, which might account for the cattle ceasing to eat the grass."

"Perhaps; but don't you think that a more natural theory is this: that the peculiar state of the atmosphere has a similar effect on all living things, making them inactive and putting them off their food; and that the trout having ceased to take may be due, not to the absence of flies and worms and grubs, though indeed all these may be absent, but simply to the direct effect which the

peculiar state of the atmosphere has on the trout themselves?"

"That is just the question," said he. "There's something to be said for both sides."

"On my side, if I may so call it for the sake of regulating the argument, there is to be said that fish under the pre-thunder influence do not show the same uniformity of conduct that is manifest among the beasts of the field, the birds of the air, and the insects. The char and the eel are ravenous under the influence, and you have told me that the salmon is not affected. May this be held to indicate that the pre-thunder influence is not so potent among creatures in the water as it is among the creatures above?"

"It might," said the naturalist; "but that would get us no farther forward. It would only show that the char and the eel revel in atmosphere highly charged with electricity. The salmon, I think, is in a different case. He finds the greater part of his sustenance not in the river but in the sea. When he leaves the sea he is so highly nourished, so fat, that he can live in the river, even if he finds no food there, for many months. Some say that when he rises at an artificial fly, or takes a minnow, he is only amusing himself, or giving way to irritation. Well, then, it may be that, being exuberant

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in vitality from his feasting in the sea, he is not so readily affected by the enervating atmosphere as the trout is."

"Ah! 'Enervating atmosphere!' Is not that a concession? If the pre-thunder atmosphere is enervating to the trout, other phenomena, such as the absence of flies and the possible absence of worms, though very interesting in themselves, are apart from the problem. That the trout are enervated would sufficiently explain why they don't rise at our flies or seize the worm."

"You may be right," said the naturalist, smiling. "Indeed, I am inclined to believe you are. I stated the alternative theory mainly because there is a good deal to be said for it. Either theory seems to be as cogent as the other. Trout-fishing brings up questions of natural science that are very subtle."

"What others are there?"

"O, many. There's the wind, for example. What has our fishermen's folk-lore to say on that subject? It says that there is little or no hope of sport when the wind is from any point between north and east. Now, that is wrong, I think; or, rather, it is not quite right. There are waters on which northerly or easterly breezes are actually the best. These breezes are the best on all waters near

the north coast or the east coast—the north wind on the north coast, and the east on the east. That, I think, is because during daytime, when the land is warmer than the sea, conducting the sun's heat more quickly, they are, except in cyclonic conditions, the usual winds on these waters. Besides, northerly or easterly winds are not always bad even on waters elsewhere. Mr. Francis Francis records that one of his best baskets was made in the south-west country in a high north wind, and there are many other testimonies to the same effect. Still, it remains a fact that, away from the north coast and the east, north winds and east winds seem adverse as a rule. How would you account for that?"

"Perhaps it is because northerly and easterly winds, being cold, interfere with the 'hatching-out' of the insects?"

"That may be; but I do not think so. Often, in northerly or easterly winds, although the trout are not rising, there are plenty of flies about. You must have noticed that. Therefore, the inactivity of the trout can hardly be a question of temperature. What is the alternative?"

"Atmospherical pressure?"

"That's it, I think. Over nearly the whole surface of the British Islands the prevailing winds are from the south-west. Wind from any point

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between north and east often, in most places, denotes a disturbance in the atmosphere. Often, at any rate during the early stages of the breeze, the mercury in the barometer is falling."

I ventured to remark that it sometimes fell when the wind was from the west or from the south.

"And when it does fall in such a wind," said the naturalist, "the same thing happens. The trout go down. Think. Have you not often been out on stream or lake on a day of this kind—light, sparkling, breezy weather in the earlier hours, probably until a little past two o'clock, with good sport all the time; and a gradual gathering of cloud, with a drop in the wind, in the afternoon, and rises becoming fewer and fewer, until they stopped altogether?"

On reflection I had to admit that the experience was not unfamiliar.

"Observe carefully henceforth," said the naturalist, "and you will find that when the weather follows the course we have sketched the trout invariably become inactive. That kind of afternoon langour should be, though it hardly ever is, recognised by the fisherman as being just as bad a portent as a wind from the north or from the east."

"But you said, a few minutes ago, that splendid

baskets are sometimes made in the winds which the fisherman's folk-lore regards as adverse."

"Yes," answered the naturalist; "and that is just what I was coming to. I think I can explain why we are now and then fortunate in these winds. Not every wind from the north or from the east is the same thing as every other wind from the north or from the east. The wind, even more as regards its direction than as regards its temperature, is often deceptive. There is a state of the weather, occurring frequently, in which the wind, whatever its direction, and however considerable its force, is not a true wind—the anti-cyclonic state, which is accompanied by brightness and frost in winter and brightness and drought in summer—the state that comes about when we are within what is known as an area of high pressure, over which, in a very real sense, 'the wind bloweth where it listeth.' Although a breeze then is coming from the north, it is not necessarily coming from the North Pole. It is only a local current; perhaps its course is not longer than three or four miles. At such a time, if the mercury, which is high, is not falling, the trout often rise freely; if it is still rising they are sure to be doing so. Besides, there is a time during which a wind from a northerly quarter—west-north-west—is the very best omen you can have. That is when a depression in the

atmosphere, the condition of storm, is passing off. Then the mercury in the barometer is rising, and so are the trout—invariably. The northerly or easterly wind under which they subside is that which comes with a depression. They tend to go down also when the wind denoting depression comes from the west or from the south-west; but they go down more reluctantly then, and that I attribute to the south-west wind being our prevailing wind.”

“You mean, in short, that it is neither the direction nor the temperature of the wind that affects the trout, but the atmospherical pressure?”

“Quite so.”

“And that the trout, as it were, like high pressure, and dislike low pressure?”

“Not exactly that,” said the naturalist. “Often they come on well when the pressure is very low. They do so when the storm-centre has passed and the mercury is beginning to rise. That is the only time when you can count upon sport as being certain—the time during which, after a storm, the mercury is creeping up. Often they are reluctant when it is high and stationary. I am speaking, you understand, of the daytime. About sundown, for an hour or more, trout almost always rise from the beginning of May until the end of August; they do so, I imagine, because, whatever the weather may be, they must feed

at some time in the round of the clock, and some instinct makes them choose the evening. But day-time is the ordinary time for the ordinary fisherman ; and I believe I am right in saying that then, although a trout or two may usually be caught, a heavy basket is certain only within twenty-four hours after the passing of a storm-centre."

"A heavy basket, then, must be very rare !"

"Of course !" answered the naturalist, looking astonished. "Haven't you found it so ?"

I cast my mind back over a few seasons, and realised that he was right. A trout or two are always possible ; but the memorably good day is unusual, and it is always in immediate succession to a storm.

This rumination having been stated in words, the naturalist was much amused.

"Ho !" said he, "there's nothing wonderful in that. What is a storm ? It is a clearance, a refreshing, of the atmosphere. Between storms the atmosphere constantly tends towards decay. Most sentient things become sluggish. Immediately after a storm, cattle, birds, insects, and human beings feel revived, and act accordingly. So do the trout. If it were not for the eel and the char, among *fauna*, and the fungi among *flora*, I would say that in this respect all living things are uniform in their habits and impulses. Notwithstanding the exceptions, I

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take that to be broadly the case. 'Nature,' a philosopher declares, 'is more simple than our conception thereof: we begin with very complicated theories, and end with the most simple.' That is a wise remark, I think."

CHAPTER X

A THEORY IN EXPLANATION

Is Nature Simple?—Subduing Reflections—Imperfect State of Natural Sciences—The Balance of Nature—Rousseau and Mr. Herbert Spencer—A Farmer's Experiment—Facts Unnoted by Agitating Philosophers—Uselessness of Calling Nature Simple—The Illusory Notion of Mr. Richard Jefferies—"Types" of Weather—Related Moods of Trout—Analysis of the Coincidences—Invisible Conditions of Weather—Temperature and Pressure—Our Theory.

"NATURE is more simple than our conception thereof: we begin with very complicated theories, and end with the most simple."

To myself, at the moment, this was a gratifying remark. It wound up a peroration in which the naturalist had affirmed my own opinion as to why our game are not available when a thunderstorm is impending. Still, I am not certain that it is wise. It strikes one, on reflection, as being more plausible than profound. Nature is approximately simple to

creatures that are guided by instinct, such as foxes, savages, and poets ; but it is certainly not simple to ordinary men. To these it is highly complex ; a congeries of puzzles, only a few of which are solved. If it were simple, simple in relation to man's ability to gauge it, certain sciences would be much more nearly exact than they are. The science of medicine, for example, would be perfect. The human body is surely the first thing in the universe, being the most familiar, to surrender its secrets to the human mind. Similarly, statesmanship would be an easy science if nature were simple. It deals with forces, human needs and aspirations, that, being common to all men, should be readily understood by most of them. Nevertheless, as the foremost authorities would be the first to admit, neither Medicine nor Statesmanship is anything like a complete science.

Sciences concerned with phenomena external to human consciousness are necessarily in states of even greater imperfection. Chemistry, until a few years ago regarded as a perfect science, is now known to be immature ; and Astronomy is even more so. This, were the occasion appropriate, could easily be shown. As I have endeavoured to indicate in Chapter IV., the truth is that when the phenomena about which we seek to arrive at generalised understandings are external to the mind we are

astonishingly apt to deem exhaustive what are in reality shallow and falsifying views.

I propose to show that this is the case in regard to the influence of weather upon the moods of trout, which is the subject of an elaborate volume, setting forth the beliefs of a hundred well-known anglers, now in wide circulation.

First, however, in order to illustrate the readiness with which the human mind is sophisticated in its best-intentioned and most persistent endeavours to interpret the phenomena of external nature, let us glance at a subject which, being in the air we breathe and on the land we tread, is much less hidden than our subject in the water.

I allude to "the balance of nature" among the beasts and the birds. At a certain time every year there is in the newspapers an agitation in favour of measures to restore the balance and to prevent it from being again upset.

Hawks and hooded crows, the writers tell us, have been shot; gamekeepers have been in pursuit of mountain foxes; farmers' clubs set prices on the heads of sparrows and starlings and blackbirds. Those activities, and all others of the same kind, are declared to be ill-judged and certain to have bad consequences. It is taken for granted that the predatory birds and beasts have necessary parts to

play in the economy of nature, and that for any interference with them Nature will take vengeance upon us. It is believed that all living creatures must have functions conducive to the general well-being. In short, it is assumed that on the moors, in the game-preserves, on the fields, and in the air, whatever is, when man lets well alone, is right.

The theory has a perennial persuasiveness. In other domains it has long been active in minds of a certain cast. Rousseau entertained it with emotion. On the conception of man in "a state of nature" he built a system of political philosophy which had influence throughout the whole of Western Europe. Mr. Herbert Spencer practically adopted the theory. He wrote a book to show that modern Liberalism was in reality Toryism of a new kind, and that, inasmuch as its restrictions or abolitions of the rights of the individual were deliberate, the new Toryism was worse than the old.

Having sanctions so eminent, the theory that we can upset "the balance of nature" only at our peril is not to be lightly dismissed. It may have justifications. Indeed, some of these are ascertainable. For example, hawks, when they have a choice, attack diseased grouse, instead of attacking healthy grouse; because the weak birds are easier prey. As grouse disease is contagious, it is therefore reasonable to

believe that hawks bestow benefit on a stock of game. They remove, or diminish, a danger. To kill the hawks is to leave the danger unchecked. A still better instance is afforded by barn owls. Very many of these birds are caught in traps which gamekeepers set for brown owls. The food of the barn owls is almost exclusively mice and rats. Rats eat more game-birds' eggs than even hooded crows consume. Rats cannot be vanquished, as a race, by either cats or dogs. Traps, even in great numbers, are of little avail against them. Only the barn owls can keep them down. To kill these owls, therefore, is to make preparation for a plague of rats and great injury to the stock of game. It would be possible, by similar reasonings, to make out a case in favour of other creatures against which gamekeepers sometimes wage ruthless war. Hooded crows, which eat the eggs of other birds, and mountain foxes, which kill lambs and anything else they can find in order to stock the larder for their cubs, are difficult to defend specifically; but it would be natural to assume that they too, though we do not know precisely in what respects, must have good reasons for their being.

All this, however, is insufficient to warrant any one in thinking that he has only to invoke "the balance of nature" in order to convict gamekeepers

and farmers of ignorance and unreason. The phrase seems to contain a profound proposition almost self-evidently true; but that which it denotes becomes, when we examine, amazingly elusive. This can be shown by experience.

Four years ago I was staying at a farm-house in Hertfordshire. The dining-room window looked out upon two fields in which cereal grains were growing. Every now and then a gun-shot sounded somewhere on the edge of the fields. The farmer said that he had to keep two boys constantly in watch over the fields. Their duty was to shoot as many black-birds as they could and to scare off all the others.

“Blackbirds?”

Yes, the farmer insisted: the birds were black-birds. There were thousands of them about.

Was he certain it was right to shoot them? Had he noticed the severe comments, published in the journals, upon the farmers' clubs that were killing small birds in Sussex?

My host had heard of these. He was also acquainted with the notion that it was wrong to interfere with Nature. He had tried non-interference. The result was that the crops of the two fields produced £80 less than they yielded when he kept the boys going with the guns.

It was very difficult to reconcile this fact with

the theory expressed in the phrase "the balance of nature." Indeed, a clear thought would not at the time form at all. By and by, however, a solution of the difficulty suggested itself. It is quite true that on that Hertfordshire farm a disturbance of the balance of nature was in progress; but what constituted the disturbance? The boys shooting the blackbirds? Certainly it was not that. If the fields had not been tilled and sown with grain, the blackbirds would not have been there; at least, they would not have been invading in such strength; at the most, there would have been only a few, looking for worms.

The truth is that the balance of nature had been upset, many centuries before, when first the land was tilled; and in all probability nature had never recovered the balance. Without tillage, the farm would have had as few blackbirds as Snowdon has; with tillage, it attracted so many that the farmer, in order to remain solvent, had to take arms against them. The farmer was not violating the balance. He was endeavouring to readjust it.

This story is more than the accurate account of an incident. It is also a parable. Many who are not farmers or gamekeepers hold themselves, towards those who are, in an attitude of intellectual superiority. This is ludicrous. Like Radicalism, which is derived from Rousseau's conception of man in a "state of

nature," a theoretical state, in which it is impossible for men to remain ; like Mr. Spencer's Individualism, which, if it is to be taken as contemplating a nation living in decent comfort, would seem to presuppose that there is at least half a square mile in the possession of each family in the land ; and like the science of Economy, which is called political though it ignores the political segregations of human beings, the Balance-of-Nature philosophy is impressive only so long as one does not look below the surface of things. It becomes absurd after a critical incursion. The balance is then perceived to be no more than a possibility not less elusive than the mathematically exact result that should be, but seldom if ever is, produced by the law of averages in a thousand tossings of a coin. In common with many other ideals, the Balance of Nature is incompatible with the needs of human society, either savage or civilised. In unnumbered details it has been upset ever since the plough was put to the soil. The ultimate cause of the shooting of small birds, far from being ignorance or avarice on the part of farmers, is the need of the people to be fed. If any one will say how birds are to be made free of the fields while yet the fields are to produce bushels to the acre at the full rate, the farmer will rejoice and put aside his guns. Until then he should not be rashly condemned on account

of his methods of securing the kindly fruits of the earth. They are rough-and-ready; but no others are known. Similarly, game-preservers and game-keepers do not deserve all the indignation which is periodically bestowed upon them. They admire the balance of nature as much as any townsman; but they know a little more about it, which makes them less assured. It is upset all over the country by novelties other than tillage. It is upset, for example, by pheasants. If those fowls had never been brought from the Far East, perhaps we should have had fewer foxes and birds of prey. The balance is upset, also, by man's exercise of his undoubted rights and liberties. There may be some arable land on a mountain farm. While the farmer has it under grain the blackcock and the grey-hen will frequent the neighbourhood. They will leave when he puts it under grass. Thus, it appears that the balance of nature is a subtle thing. It is not so simple as the multiplication table. Whether he does something or does nothing, man is sure to upset it. The balance is not only, though mentors of farmers and gamekeepers think so, an affair of the rural wilds. It affects the town, or the town affects it, also. Some day soon, as an off-shoot of the aspiration towards the Simple Life, there may be a demonstration at the Albert Hall in favour of non-interfer-

ence with the balance of nature. As he speeds to the conference in a hansom cabriolet, will each demonstrator realise that the balance is outraged by the good horse that carries him? According to the scheme of Nature, the horse is as much an alien in London, and indeed in Europe, as the rabbit is in Australia, or the pheasant in Britain, or the huchen in the Thames, or the rainbow trout anywhere on our side of the Atlantic.

This analytic glance at the general understanding of the balance of nature on the land and in the air should warn us against the temptation to be dogmatic about the influence of weather on life in the waters. Nature may be simple; but it avails us little to call it so. Living on the land, we can study the birds and the beasts closely, and many skilled men are constantly doing so; yet, as we have seen, the science of the balance of nature, in regard to them, is still purely theoretical and to seek. Unable to live in the water for more than a few moments at a time, and knowing the conditions of life there to be different from our own, we must perceive that any judgments in relation to our subject at which we may arrive must be in large measure speculative. Even the simpler phenomena have led observant minds astray. For example, Mr. Richard Jefferies wrote that on a lake the best sport is always to be

found along the shore to which the wind is blowing. His thought was that most of the flies are swept thither, and that, therefore, it is there that the trout are feeding most eagerly. This notion, which is probably accepted by thousands of anglers, is illusory. Flies come up along the one shore as readily as along the other, and as they rise trout take them. Those which rise along the shore from which the wind is blowing are always in calmer weather than those which rise along the shore to which the wind is beating. Fewer of them are swept away in the air. It is, therefore, in the lee of the land, along the comparatively quiet shore, that sport is most probable in high wind.

The larger subject which we have now in hand is delicately complex. Weather has many modes, and some of these, especially in the British Islands, merge into one another so gradually that you cannot always be sure which mode holds the air at any time. Nevertheless, it is also of certain "types," aspects that catch the eye or other organ of cognition; and with each of these a certain mood of the trout is associated in the experience of anglers generally. These facts afford a basis for reasoning.

We have seen how the trout are affected in the time immediately preceding a thunderstorm. We

have seen, also, how they are affected under various winds. These conditions, exhaustion or revival of the atmosphere and the winds, are the main phenomena with which the angler is concerned; and it may perhaps be considered that, through the help of our friend the naturalist, their relations to the moods of the trout have been elucidated.

Other familiar types of weather are those which are characterised by bright sunshine, by clouds, by rain, by snow, by fog. With a few exceptions, the contributors to the interesting volume recently alluded to, *Fishermen's Weather*, edited by Mr. F. G. Aflalo, regard these phenomena as the direct causes of the fish giving good sport, or of their giving poor sport, or of their giving none at all; and it seems certain that in this understanding they are supported by anglers at large. The minority reporters reach nearer to the truth. It can, I think, be shown that, except the pre-thunder condition, which seems to have a direct influence, and the freshening wind, which also seems to have a direct influence, the atmospherical conditions usually regarded as causes of the trout taking, or of their not taking, are nothing more than symptoms of the causes.

Let us consider them methodically.

Bright sunshine is sometimes a condition under which sport is brisk. It is so, very often, after rain

which has raised the water ; or in high wind. Sometimes, on the other hand, it is a condition under which sport is poor. It is so, very often, on a calm day in summer. In itself, therefore, it is not in any definitive relation to the moods of the fish.

Clouds are in the same case. Under them sport is sometimes good, sometimes bad. Therefore, it cannot be said of clouds generally that they are either favourable or unfavourable.

Rain and snow, which are the same thing, condensed moisture, in different guises, are related to the moods of the trout exactly as the sunshine is and the clouds are. Heavy baskets have been made amid each of them, and amid either the baskets have been empty. In itself, therefore, neither rain nor snow is a cause of sport or of failure.

Fog is not so easy to deal with. At a certain time of the year, which includes May and a part of June, it is a frequent evening condition on long stretches of rivers falling into the sea. In mature summer the land begins to lose heat rapidly when the sun is becoming low ; soon the temperature of the land is less high than that of the water ; and the wind, which was from the sea during most of daytime, is off-shore afterwards ; but before that time of the year the late afternoon and evening wind is frequently from the sea, and it bears fog. Being

usual, this does not affect the habits of the trout in the stretches mentioned. On the other hand, when the stream of fog goes farther inland than usual, it is there accompanied by an observable change in the mood of the fish. They go down. Then, any part of the land, at any time of the year, may have mists of other kinds. One of these is that morning mist which is absorbed in the warmth of the sun-rays; another, thin, but sufficient to shorten considerably your range of vision, lingers, grey or blue, all day, even, sometimes, when there is wind. Neither of these is accompanied by any peculiarity in the behaviour of the trout. There is fog of still another kind. It is common before midsummer when the temperature is low; sometimes, at any stage of the year, you see it when rain has ceased and for hours after. It is not all through the atmosphere. It is isolated. It lies in white or grey wreaths on the hill-tops, or on the hillsides, or in the valleys. I have never once found trout in good humour when fog of that kind was about, and I do not know any angler who has. It is, however, a mistake to suppose that this fog is the cause of the fish lying low. Usually the wreaths are far away from them, and often the general appearance of the atmosphere is such as might encourage the hope of sport. What, then, is the

import of the coincidence, the mist-wreaths and the fasting of the trout? Clearly it must be that the wreaths are the visible symptom of a condition of the atmosphere which sends the trout to the bottom.

In all the cases we have examined the cause of the mood of the trout, whatever that may be, is not the phenomenon with which it is related. That phenomenon is itself the result of the cause. The cause is behind. It is invisible.

Now, the invisible conditions of the atmosphere, the conditions underlying the weather phenomena that we can see, are pressure and temperature. It is to one of these, then, if not to both, that we must go if we would discover why, when the water is in ordinary volume, the trout are rising or are not rising. We will consider them separately.

Is it to temperature of the atmosphere that we can attribute either mood of the fish? I do not think so. Often the trout rise freely when the mercury in the thermometer is low. Indeed, not a few anglers whose experiences are published have had such splendid sport in snow-storms and chill winds that they are tempted to believe inclement weather of that kind a condition favourable to the pursuit. Often, also, the trout rise freely when the mercury is high. Other anglers, the majority,

believe that in spring and autumn temperature above the ordinary is an auspicious omen. It is obvious that neither belief is right. If sport were invariably or usually good in high temperature and invariably or usually poor in low, we should be justified in assuming warmth to be a cause of the trout rising. Similarly, if sport were invariably or usually good in low temperature, and invariably or usually poor in high, we should be obliged to put our trust in chills and snows. As there is no rule about the moods of the fish in relation to either cold air or warm air, the cause of their behaviour is not to be found in exceptional temperature. Is it to be found in "normal" temperature? It would not seem so. There is no evidence that they rise either more freely or less freely in "normal" temperature than in temperature above or below that. Temperature, as I have endeavoured to show in *Trout Fishing*, affects them as regards where they lie. For example, early in spring many trout will be found along the north shore of a lake, where the sun is warming the shallows, while there will be only a few, if any, along the south shore, where the water does not so well retain the rays. This indicates that the fish do at that time like a temperature higher than the mean temperature of the lake. It has no bearing, however, on the question of their moods in other

respects. By affecting the insects on the water, temperature may bring about another result that must be noted. For example, it frequently happens that the trout, which have been rising well all over a stream or a lake, suddenly go down just after the coming of a cold wind. At one moment the surface of the water is alive with rises; soon afterwards there is not a boil or a dimple to be seen. If a chill air has intervened, it is natural to attribute the change in the behaviour of the trout to the change in temperature; but doing so may be an error. Often, on such an occasion, one goes on catching trout just as quickly as one had been catching them before the rise at insects ceased. What does that show? It shows, I think, no more than that the insects on which the fish had been feeding were of a tribe, or tribes, easily killed by cold air. That the trout are no longer breaking the water implies only that there are no longer insects alive on the surface; they still take your imitations, especially if these are slightly sunk. Often, on the other hand, soon after the chill air has set in, the fish, which had been rising well, not only cease to rise at real flies, but also cease to rise at yours. Many a time I have heard an angler say, "I never had a rise after the cold wind came out of that ugly cloud." In such a case, I think, it is not the drop in temperature

of the air that causes the trout to go down. The cause, I think, is a drop in pressure of the atmosphere. The "ugly cloud" is the manifestation of a change affecting not only the thermometer but the barometer also.

That, I suggest, is the key to our problem. As far as the atmosphere is concerned, the cause of the trout taking or not taking is the state of pressure. Sunshine, clouds, winds, warmth, cold, rain, snow, and fog, the phenomena that are commonly regarded as causes, are themselves produced by the influence which affects the fish. That is to say, these manifestations of the weather and the moods of the trout, instead of being in the relation of causes and effects, are alike effects of the same cause.

It may be remarked that a change in temperature is sometimes the cause, besides being at other times the effect, of a change in pressure. I know it is; but the fact does not, I think, invalidate the theory I have been seeking to set forth. When the trout go down, or come up, under a simultaneous change of temperature and change of pressure, the influence that moves them is the change of pressure only. This proposition, even if there were no scientific reasoning in its favour, would, I think, commend itself to any angler who has had much experience and has observed closely. It sometimes happens

that trout rise freely during most of a day that begins with frost, is very hot between one and three o'clock, and bitterly cold after sundown. On such an occasion it will be found that, while the mercury in the thermometer has leapt high and dropped far, the mercury in the barometer has been either steady or rising.

It would be possible to support our theory through an elaborate connotation of familiar phenomena of the atmosphere with the varying moods of the trout; but that might by some readers be found tedious. It is the less necessary inasmuch as there is one instance of the causal relationships so striking that it will suffice, I think, to establish our theory as true in regard to them all. Writing in *Fishermen's Weather* and elsewhere, angler after angler records, as has been mentioned, splendid sport in time of snow. On the Don once, in May, and on other waters frequently, I myself have had similar good fortune. Now, snow, especially in spring, very often comes when one weather-glass marks low or falling temperature and the other records a rising pressure.

Is sport, then, certain when the mercury in the barometer is high?

It is not. The mercury being high is not a better omen than the mercury being low. Its being steady

is negatively a good sign in spring or when the trout are moving again after the period of summer indolence. Steadiness indicates that no change for the worse impends, and throughout the seasons mentioned trout habitually rise, more or less freely, when the weather is equable or improving. It is not high pressure that puts the fish into the mood that results in sport. Especially in summer, they are often unwilling to rise when the pressure is high. The condition that brings them to the flies is, I think, a sudden increase of pressure. The time of their most agreeable activity begins soon after the passage of a cyclonic storm that has brought rain. The mercury is low then ; but it is going up. That, as our eminent naturalist said, is the only time when sport is certain. Usually it lasts until the barometer records the mean pressure. Then, whether the mercury rises farther or begins to fall, the trout become comparatively indifferent, during daytime, to insects and lures alike. They will wake up again, and give sport, immediately after the passage of the next storm.

CHAPTER XI

FLIES

How many Patterns?—Mr. Stewart's Opinion—Mr. F. M. Halford's—"Spiders"—What their Effectiveness Suggests—Mistaken Notions—Do Trout Pick and Choose?—The Need for many Patterns—Are Dates of Rises Affected by Weather?—Opinions of Mr. R. B. Marston, Mr. J. J. Hardy, the Rector, and the Naturalist—These Opinions Examined—Sir Herbert Maxwell's Testimony—Our own Conclusions.

With how many flies of different patterns should the angler be provided?

That question is much debated. I myself have no doubt as to the answer. It is that the angler should have at hand a lure in imitation of every insect that is or may be on the water at the time of his seeking sport.

This, I know, is not the general opinion. If one may judge by what one hears and reads, the dominant belief is that a book or a case stocked according to



EYED FLIES FOR THE STREAM.

From a photograph by Mr. P. D. Malloch.

standard patterns comparatively few will suffice for the whole season. "When the trout are rising freely they will rise at anything" is a maxim very popular among anglers in all parts of the country. Mr. W. C. Stewart, very famous in Scotland, maintained that for streams six patterns were enough; and Mr. F. M. Halford, very famous in England, is content with thirty-six. Between six and thirty-six there is a wide difference; but it is not so striking as that between thirty-six and the number of the flies which will in this chapter be mentioned as desirable. To justify my own specification, then, is no light task. Still, it is not, I think, impossible.

The popular maxim which has been cited belongs to folk-lore of a facile and indiscriminating kind. It is true that when the trout are rising freely an angler using a cast made up at random is likelier to catch a few than he is when they are not rising freely; but no more than that can be said. At least, that marks all the distance I myself can go with the maxim. When trout have been rising freely I have found, as has been mentioned, that they have a preference for a fly of some particular pattern. Whether the water was a Hampshire stream, or an English mere, or a moorland loch, or a mountain burn, I have never met an exception to this rule. Even when all three flies were successful, there was invariably one

that was conspicuously so; and it was not in every case the end fly, which, having gut only on one side of it, is naturally believed to have a better chance than either of the droppers. The maxim, it would seem, cannot be accounted for otherwise than by a surmise that on good days anglers are too well content with their sport to take heed of the details. As it must be noted that in this book dogmatic statements are very rare, I shall not be regarded as speaking at large when I say that any one who observes carefully on the next great occasion will find what I have said to be true. Taken to mean that when trout are rising freely they rise as well at one fly as at any other, the maxim is fallacious.

The teaching of Mr. Stewart is an obstacle much more serious. Mr. Stewart's exploits with the rod are not in any measure legendary. In connexion with two new editions of *The Practical Angler*, I have had the pleasure of reading testimonies by a few men, among them Mr. A. G. Bradley, who were his occasional companions by the waterside, and thus I know that Mr. Stewart was in Scotland the most skilful angler of his time. His teaching, therefore, commands respect. It need not, however, overawe. It is susceptible of an explanation compatible with the notion that one's patterns should be many more than sufficed for Mr. Stewart. That wizard of the

waters wrote : "The artificial flies in common use may be divided into two classes. There is first the winged fly, which alone, properly speaking, merits the appellation ; and there is the palmer, hackle, or spider, by which last name we mean to call it, believing that, if it resembles anything in the insect tribe, it is a spider. As a means of capturing trout, we rank them higher than the winged imitations. When trout are taking, winged flies will answer very well ; and sometimes, but very rarely, we have found them more killing than spiders. But in summer months, when trout are well fed and become lazy, or when they are much fished for and become shy, we have found spiders much more deadly than the most tempting winged fly that can be made."

That is an illuminating passage. Mr. Stewart understood that the palmers were taken by the trout to be spiders. Nowadays, in the light of a wider knowledge, they are believed to be taken for flies that are going down through the water to lay eggs or are coming up after having laid them. Any one who has seen a spinner in the water, and noticed the aspect of a palmer there, will adopt the modern view. The wings and the setæ of the spinner are drawn closely round her body ; the hackles of the palmer, when the lure is downstream, or being drawn down at a pace greater than that of the current, are

exactly in the same position. In contour the fly and the palmer are extraordinarily alike. In colour also, there is reason for thinking, there must be a close resemblance between the spinner in the water and the palmer in the water. It is in the bodies of flies, rather than in the wings, that we find the greatest variety of hues, and when the wings are closed the hues of the bodies are concealed. Besides, when closed, the wings themselves are less distinctive in hues than they are when expanded. Most of them, indeed, may be described as being dark dun. Thus, it is certain that a dun palmer will represent to the trout a greater variety of insects than any winged fly can represent.

Now, it was largely by means of such a "spider" that Mr. Stewart made his wonderful baskets. When a dottrel was available, a feather from the outside of its wing provided the hackles; when it was not, the inside of the wing of a starling gave "an excellent substitute." Mr. Stewart used a black palmer and a red palmer also, and thus plied lures which were at least roughly representative of many insects at egg-laying times.

Mr. Stewart's remarks on seasons for winged flies and seasons for palmers are very suggestive. Winged flies were successful when the trout were rising freely; but they were not nearly so effective

as palmers in the summer months, when the fish were lazy or shy. In order to understand this, we must remember that, although he cast upstream, and was particularly expectant at the moment of his flies alighting, Mr. Stewart was what is known as a wet-fly fisherman ; it is morally certain that most of his trout were hooked when the lures had dipped. Now, his few winged flies, in which brown was the prevailing colour, were precisely those which most closely resembled many of the insects on the water in spring ; it is in April and May, when they are very hungry, that the trout most frequently rise freely, taking insects on the surface as well as insects and other things below ; that, I think, explains Mr. Stewart's success with winged flies early in the season.

His lack of success with them in summer, and his triumphs with the palmers then, seem to justify the theory with which this chapter opens. The palmers were effective because, as has been indicated, they resembled many insects that were going down into the water or coming up, and the winged lures were comparatively useless because most of the insects on the surface were unlike any of the patterns by which Mr. Stewart limited his equipment.

In short, Mr. Stewart's flies were too few. His baskets, which were generally heavy, would have been heavier had his science of flies been wider.

That, it may be said, was hardly to be expected. The tackle-shops half-a-century ago offered a selection of flies which was meagre in comparison with that which they offer now; besides, Mr. Stewart, who found shop flies as a rule too thickly busked, seems to have been his own dresser. Still, even at that time, as Mr. Stewart knew, Mr. Francis Francis was propounding the theory that the lures on a cast should always be in imitation of insects on the water.

Mr. Halford's specification is much more nearly than Mr. Stewart's suggestive of the ideal. It is the work of a man who, besides being a skilful angler, has for a good many years been studying the aquatic flies of a region with care. Any one, especially if he be a novice, may naturally think Mr. Halford's flies sufficient.

What, then, is to be said for my own? Why are there mentioned in the list about to be given a good many flies that are excluded from Mr. Halford's?

The main reason is that, whilst Mr. Halford's study of flies has been confined within the chalk-stream region in the South of England, I have been endeavouring to make a specification for the whole country. Some waters have insects that are not to be found on others. Mr. Halford's chapter on Flies is in a sense thorough. He has studied the insects

of the chalk-streams almost as closely as another naturalist, White of Selborne, studied the birds of the same region. I myself have no such claim to authority either as regards a neighbourhood or the land at large. My lists, however, have authority of another kind. They are only in part my own composition. The drafts, written from observation by myself much supplemented by knowledge kindly imparted by others, were revised by Mr. William Senior, Editor of *The Field*, whose authority is beyond dispute; and in most cases the buskings are those which are approved by Mr. William Hardy, himself a scientific angler, in whose cabinet at Alnwick, to which anglers in all parts send news of discoveries with their orders, there is exceptionally expert skill.

What is the basis of the notion that a few flies of standard patterns will serve all the season through as successfully as the complete equipment? As far as I can learn, the notion has never been given a completely reasoned statement. It is, however, easy to imagine two beliefs, on either of which it may rest.

One of these is that trout will be attracted by anything that is seemingly alive and in shape and size is approximately like a fly. This really means that the colours of the lure are not important. The other belief, less extreme in scepticism as regards our

own theory, is that a fly which is successful at one time of the season should be successful at any other.

Neither of those beliefs has a basis in fact. The first, which is considered in *Trout Fishing*, has been discarded by that studious man, Sir Herbert Maxwell, with whose name it is associated. Trout have been known to take lures of unnatural colours ; but there can hardly be an angler of much experience who regards their doing so otherwise than as rare breaches of the rule. The fish discriminate with nicety. To the human eye there is no great difference between a Greenwell and a Saltoun ; yet any one who experiments will find that if the trout are eagerly rising at one of these they will not rise so well, if at all, at the other. Certain insects appear twice a year, in spring and towards autumn, which explains why in September you use again certain lures that were fitting at the beginning of the season ; but if you try a Mayfly in July you will soon be convinced that the other belief is unsound. A fly that is out of date will sometimes be taken by a trout ; but as a rule it will be ignored or fled from.

There is still another possibility to which the notion that a few flies are sufficient may be attributed. Perhaps the trout pick and choose among the many insects with which Nature bountifully bestrews the waters ? Perhaps some of these

are good to eat, and others either not so good or positively bad?

When this occurred to me I hastened to consult the naturalist whose thoughts about the influences of the weather have been set forth. He, I found, had been pondering the same problem. He had even essayed to solve it. He had gathered flies of many different tribes and tasted them! Some had been bitter, and others agreeable; but, it is needless to say, the test was invalidated by the consideration that the palate of a trout and that of a man are not known to have the same susceptibilities.

It would be rash to assume that all flies are equally welcome to the fish. There are, or appear to be, reasons for thinking that some flies are eaten greedily and that others are either repellant or not so tempting. There is, for example, the Dragon-fly. To see that beautiful creature passing in the summer sunshine, one would think that if one were a trout it would be a morsel daintier than a March Brown and at least as choice as a Mayfly; but does the trout take the Dragon? I do not think so. I have never, it is true, seen the Dragon-fly actually afloat; but I have often, in Hampshire and elsewhere, seen it very close to the water, not going quickly, and I have not once seen it bring a trout to the leap.

Similarly, as has been mentioned, there are many days in summer when myriads of flies float down the streams unheeded. Even when we remember that the fish are well nourished at that time, and perhaps lazy, it is not easy to be sure that these are as much to the taste of the trout as the insects that come with the spring. Their qualities in that relation are a subject for conjecture.

Still, we are without reason for supposing that when the fish are not rising actively at flies in general it does not matter what lures you offer. It matters much. You may not raise a fish by plying lures in imitation of insects on the water or due to be there; but, if you do not, you will certainly be unsuccessful with any others.

Although our list is longer than many a competent angler will deem necessary, every fly mentioned in it is of proved utility. Each is a talisman for some time of the season. To tell that time exactly is difficult. When I set about planning this book I hoped that the trouble would be found soluble. I hoped that I should at least be able to apportion the flies to the weeks of the season, instead of arranging them, as in *Trout Fishing*, according to the months. An idea in natural history had occurred. It was that there must be error in the general understanding that the time of the appearance of any

insect is determined by the weather. This idea seemed cogent. Insects come from eggs; eggs of the kinds with which we are familiar, such as those of poultry, are hatched, if the lives within them are not extinguished, at times exactly ascertainable in advance; surely, therefore, the reproduction of insects must be similarly regular? Vegetable life is retarded or hastened by unusual weather; but there does not seem to be a case in which animal life, among the varieties familiar to us, is so affected. Thus I reasoned; and on reflection it seemed probable that the general law of regularity had come to be considered inapplicable to flies simply because, these being comparatively minute creatures, living, reproducing their species, and dying amid obscure conditions, the insects had never been under exhaustively close and systematic observation; if we knew all about them, I thought, we should probably find that the times of their coming were much less widely variable than those of the buddings of oak and ash and the first note of the cuckoo. In short, it should be possible to tabulate the lures in a calendar much more meticulous than that of the months. Theoretically, indeed, a calendar of days was possible; but meanwhile, until the hypothetical time when this tome should blossom into a new edition, a calendar of weeks would suffice. Even that would be an

invaluable boon to the angler. It would reduce, probably by a fourth, the extent of the experiments he must sometimes make, according to current instructions, before being sure that his book or box does not include the very lure for which the trout are waiting.

Aglow with this idea, I communicated with a few friends, very learned in the affairs of angling, to whom I have the privilege of appealing in times of crisis. What did they think of it, and would they help me to give it effect? If they deemed a daily calendar out of the question at present, would they help me to compile a weekly one?

The first answer was not encouraging. It was from Mr. R. B. Marston, who wrote: "No: it could not be a weekly calendar, for every season varies, sometimes for weeks; but I could give the approximate times of the appearance of the most important flies."

The second answer gave me some heart of hope. Mr. J. J. Hardy wrote: "I agree with all you say as to periods and times of 'hatching'; but I believe all this is affected by temperatures; although we look for certain flies at certain times, we do not always find them—a circumstance, I think, entirely due to the weather. I have noticed that the Duns are brighter in colour when the weather is cold.

Even the Olives are sometimes of so faint a hue in cold weather as to be scarcely distinguishable from Blue Uprights. Of Mayflies we sometimes have a fair rise here on the AIn—fine yellow females in very hot weather, but in a cold season rarely seen ; when you do find one it is generally less yellow. Possibly when the larva is developing into the imago and the weather cold, they die, and one sees few ; or, hanging to some plant life in a half-numbered state, they fall easy victims.”

That seemed assent to my proposition. A fly lays eggs in or on the water. In the course of nature there must at a certain fixed time be one of three results. The eggs will have issue in healthy insects ; or, if the temperature has been unusually low, they will have issue in insects of unusual colouring ; or the life within them will have been extinguished. Mr. Hardy seemed to agree with me in thinking that a mere postponement of the rise of flies was not among the probabilities. The insects must come out in full strength at a certain date ; or they may then struggle into impaired completion, and, unable to rise into the air, escape the notice of anglers ; or they must be dead then.

Just as I was congratulating myself on the support of Mr. Hardy, the Rector came in. I wondered how I had not thought of him, in con-

nexion with the problem, before. He would be an invaluable counsel. He plays golf, curls, shoots, fishes, sings, cultivates domestic poultry, and collects insects, of which he has nearly a thousand specimens preserved in glass-covered cases. This was the man to deliver judgment! Clad from top to toe in oil-skins, he had come, at the height of the great storm which began at Christmas 1906, to tell me about an instrument he had designed for the clearance of snow from footpaths. That subject having been disposed of, I inquired as to the life-history of aquatic flies. Was there a fixed time between the laying of the eggs and the appearance of the insects; or did the time vary in accordance with the variable weather? "They come out early," he said, "when the weather is warm, and late when it is cold." I reminded him that, whatever the weather was, the chickens of his poultry came out on the twenty-first day after sitting upon the eggs began, and that they did not come out at all if the beginning of the sitting was deferred beyond a certain time. The reverend gentleman did not see what bearing those facts had upon our question. I explained that flies also, through a grub stage, came from eggs; adding that I could not readily suppose that Nature would deal with eggs of one kind in one way and with eggs of another kind in another. His answer was striking.

It revealed an assumption that between the laying of flies' eggs and the coming of the next generation there were only a few hours! When I mentioned the time that passes before the eggs of the Mayfly issue into life of the upper air the Rector was much astonished. At the close of our debate he was a zealous believer in my theory. That, whilst gratifying, was much less relevant than the fact that my reverend friend, whose favourite sport is angling, in which he is an adept, had known practically nothing about the aquatic flies. His understanding of the subject being only an echo of hearsay, it seemed probable that the understanding of anglers in general was no less casually informed.

A few days after, the railway having been freed from the snow, I went to consult the man whom I believe to be learned above all other men on angling and the related problems of nature; I did so with a growing suspicion that the subject particularly in hand had never been probed to the bottom. This authority was as unhesitating as Mr. Marston and the Rector in belief that cold weather caused delay in the appearance of the flies. That is to say, he was so to begin with. He wavered slightly when I reminded him of an interesting statement he had made to me a year before. That was about Lochleven. In June and July, when salmon-fishing in

the river which flows beside his home is dull, my friend likes to have a day, frequently, on that splendid water, where he is almost always conspicuously successful. In order that he may never be at a loss as to what lures he should use, he has, at his house, a large tank containing a layer, a foot deep, of the bottom of Lochleven. The soil and weeds contain the young of insects that fluttered on the loch last season. Thus, of a morning, when he finds himself free to fish, he looks into the tank to see what fly has risen or is about to rise. That is the fly of which he has to take an effigy, the fly that will be on the loch when he embarks. He finds that his tank is always an accurate index of what is happening on the loch. Having recited this and marked my friend's nods of acquiescence in my recollection, I pointed out that his home was about thirty miles to the north of Lochleven, that it was farther than the loch above the level of the sea, and that the climate of the tank was not the same as that of the loch. That the flies in the two places appeared simultaneously was, I thought, clear proof that, although unusual weather might conceivably extinguish the life of some immature insects, it did not affect the date of the appearance of those insects which survived until the hour when they were theoretically due to flutter into the air. Was not

that so? My friend would not commit himself to a definitive opinion; but I do believe that he perceived our lore on the subject of this chapter to be unexpectedly in need of revision.

Next morning, as I was going out of doors, what did I see? Midges dancing in sunshine above the lawn! Throughout the time of frost and snow there had not been any midges; now that the weather was mild, there they were! What had become of my theory?

Certainly the spectacle shook it; but it was not, I think, a disproof. The midges had not been brought to birth by the mild weather. The mild weather had only prevented their premature destruction. The proximate cause of the midges being there was simply that the hour of their winged life had come. They were not insects carried over as it were from the period of inclemency. Those which might have appeared on any day during that period were dead when they were due. The midges were not, either, what might be called a draft on Nature's stores for the morrow or any day after that. The midges due on the morrow, or on any day after, would appear, when due, if the grubs survived until then and the weather were such as they could live in.

It must be borne in mind that the whole tribe of any fly does not appear in the air at once. The

tribe is in families. Many of these appear, breed, and disappear simultaneously; but many others are later. This is evident when we remember, for example, that the Mayfly, which individually does not live in the air for more than two or three days, is often on the water for a fortnight. Family succeeds family throughout that period. Thus, it becomes easy to answer a question that may have arisen in the reader's mind. The question is, If unusual weather prevents flies from emerging into complete and reproducing life, how is it that they do not become extinct? The answer is that Nature provides a succession of families sufficiently long to outstay the irregularity of the weather. One brood of a species may succumb; but it may be that an earlier brood survived; if not, a later brood will survive; and thus the species is perpetuated.

It will be said that this reasoning does not exclude the possibility that the earliest rise of any fly on any water in any season may be later than usual. It may, indeed, be pointed out that, as the first brood is at least as likely as any other to meet inclemency, the earliest rise of any fly must tend, as time goes on, to be later and later. This would seem to follow from our argument, which, whilst admitting that the first appearance of a fly may be late, denies that it can ever be abnormally early.

Every year that witnesses an extinction of the first brood of any species must, it will be said, mark a stage in the gradually-increasing belatedness of that species.

The comment may seem unanswerable; but it is not so. It involves two oversights. One of these is incidental to the smallness of the range in which the ordinary angler makes his observations. For example, on the first day when the Grannom should be out he fishes over two miles of water and does not see a Grannom. Naturally, if he reflects in the light of our theory, he will say, "Ah! the first brood of Grannom is dead or dying; every season henceforth the first rise of Grannom will be at least a day later." The evidence is not sufficient to justify the conclusion. Our observer has been over two miles of water. Although the fly did not come out there, it may have come out elsewhere on the same stream. The temperature of a river is not the same at all places. A tributary from hills on the south lowers it slightly for a space; a tributary from a northern slope, against which the sun-rays beat, raises it slightly; there are other variations from other causes. The absence of any fly on part of a river, then, is no proof that it is absent all over the river. It does not even suggest that the general absence is probable. The other oversight is as

regards the ability of flies to fly. Naturally, having seen a rise of insects, which appears to begin and to end within a narrow space, one takes it for granted that the brief life of the creatures is within a locality correspondingly narrow. That may be a mistake. It is to my own knowledge certain that March Browns have travelled with the wind from one stream to another thirty miles away. Thus, if, as is probable, flies of other species have power of the same kind, even though not to the same extent, we can readily perceive that a catastrophe to any species on any water is not necessarily final. Nature, which spreads the spawn of pike by means of water-fowls, spreads the species of insects by the winds.

Besides, it is more than possible that the complete extinction of a brood of aquatic flies, before any eggs have been laid, is extremely rare. Usually the angler who complains that there was no "rise of fly" owns to having noticed a few "stragglers." The stragglers may have arranged for another generation.

In short, it is manifestly impossible for any man to say of any unpolluted water that any year has passed without a rise to some extent of any particular fly on the date when that fly was due.

All these considerations having been weighed, what may be called the previous question arises. Are we warranted in assuming that aquatic flies are



EYED FLIES FOR THE LAKE.

From a photograph by Mr. P. D. Malloch.

very much affected by the weather? A doubt on that score has been in my own mind all through this chapter. Its nature may fittingly be illustrated by what a Scots shepherd said to Lord Rutherford, who, in Court, had been grumbling at east wind and mist. "What ails ye, mon, at the wind? What ails ye at the mist? It slokens the grun', and it slokens the ewes; and, mair than that, 'tis the wull o' God." We often hear talk about "abnormal weather." Let us look into the assumption which that phrase expresses. What is abnormality? It is monstrous variation of an individual from the type. It is the sum of the stigmata of things unimportant and fleeting. It appears here and there in animal and vegetable life; but it does not fall upon animal life as a whole, or upon vegetable life as a whole. No general law of Nature is ever as a whole affected by abnormality. Climate is a general law. Climate, therefore, is never abnormal. Do not you shiver with pain when some one speaks of the "beastly weather"? You do. Why? It is not because of the quality of the person's words. It is because of the quality of his understanding. He is in stupid error, and error of that kind jars against your instinctive knowledge. Now, as the climate is never abnormal, how can we suppose that the lives which are governed by it can follow other than a normal course? We cannot

rationally do so at all. I do not believe that as regards our subject in this chapter there ever is, or ever has been, or ever will be, what may be called a general abnormality. In his contribution to *Fishermen's Weather*, Sir Herbert Maxwell says that the regular rise of trout "is dependent on the rise of fly, and that, of some species, seems to depend on *season and hour of day*, irrespective of weather. For instance, one March, on a bitter, blustery day, with driving snow and the river full of floating and fixed ice, there was a tremendous rise of March Browns on the Helmsdale, which the trout were ravenously devouring, though the water temperature was only 33° F. No angler would have found any encouragement in the text-books to go forth under such a sky. Yet he might have filled a basket. The biggest rise of March Browns I ever saw was on the Tay in April 1905; weather bitter, with hard north wind. The river was alive with rising trout." That passage is highly significant. The March Brown is a large fly. You cannot help seeing him when he is out. Many aquatic flies are much smaller than the March Brown. They may be on the water in hundreds without your noticing them. What cause have we for assuming that, whereas the March Brown rises punctually, whatever the weather may be, other flies rise only when the weather

permits? In good sooth we have but little. The main cause is the negative one that, though the flies are out, we notice them only if an eager rising of the fish moves us to look for the attraction. In short, many aquatic flies, simply because they are small, have not been studied so closely, and are not understood so scientifically, as certain others, such as the March Brown and the Mayfly, the largeness of which forces our attention.

Nevertheless, whilst our theory of normality in climate and in insect life seems irrefragable, it is certain, as we have seen, that in the processes of nature a brood of flies may fall into one of three destinies. It may have complete and reproducing life; it may have impaired life, only a few, if any, of its units emerging into the air; it may succumb. The last-mentioned contingency must, I think, be but rarely actualised.

This theory, if the reader has been able to follow the exposition in acquiescence, will have two results upon his understanding of our subject. In the first place, it will afford an explanation of the not uncommon discovery that trout eagerly take some lure at a time when the fly which it represents is not to be seen on the water. Whenever that happens, the trout, I think, are rising at the lure because the fly which it represents is due; perhaps, indeed, it is,

in impaired completion, too feeble to take the wing, being carried downstream under the surface. In the second place, the theory will show that many more lures than a few are desirable. There should be at hand one for each of the insects that are, or might be, on the water at the time of fishing. In "abnormal" weather the systematically-arranged contents of a well-stocked fly-book or fly-case may be a good guide to the angler. They show what flies would be on the water if the weather were "normal." Perhaps, also, they show what flies are in the water, unable to emerge into full life in the weather as it is. As the trout very often feed on flies below the surface, that is exceedingly important knowledge.

Here, then, is our Calendar. It is the best that I can at present devise. By and by we may be able to have the entries rearranged under weekly headings; perhaps, later still, under headings of the days. The dates of the appearance of certain flies vary, in some cases within a range of three weeks, according to latitude. Our Calendar is an endeavour to strike the mean between the South of England and the Highlands.

CALENDAR

MARCH

Stream Flies.

No. 1.—GREENWELL'S GLORY

Body—Light yellow tying silk waxed with cobbler's wax.
Hackle—Coch-y-bonddu ribbed with yellow gimp.
Wings—Inside feather of the hen blackbird's wing tied on in a bunch and then split with the gimp.

No. 2.—BLUE DUN

Tail—Fibres of blue dun cock's hackle.
Body—Water-rat's or mole's fur spun lightly on yellow silk.
Hackle—Blue dun hen's.
Wings—Snipe or starling.

No. 3.—OLIVE DUN

Tail—Fibres of olive dun cock's hackle.
Body—Dyed olive quill.
Hackle—Dyed yellow olive.
Wings—Snipe or starling.

No. 4.—FEBRUARY RED.

Body—Two turns of claret wool at tail end of body;
remainder, light hare's ear.

Hackle—Claret.

Wings—The palest part of a hen pheasant's feather.

No. 5.—NEEDLE BROWN

Body—Stripped peacock quill.

Hackle—A brown cock's hackle.

Wings—Mavis.

No. 6.—BLACK PALMER

Body—Black wool ribbed with silver gimp or thread.

Hackle—Black cock's from tail to head.

No. 7.—RED PALMER

Body—Red wool ribbed with yellow gimp or thread.

Hackle—Red cock's, from tail to head.

No. 8.—MARCH BROWN (Male)

Tail—Two fibres of brown mallard.

Body—Dark hare's ear slightly mixed with claret wool,
ribbed with yellow gimp or silk.

Hackle—Brown partridge.

Wings—Hen pheasant's tail feather.

No. 9.—MARCH BROWN (Female)

Tail—Two fibres from the brown mallard.

Body—Light hare's ear slightly mixed with light green
wool, ribbed with yellow silk.

Hackle—Brown partridge.

Wings—The soft side of a hen pheasant's wing feather.

No. 10.—MARCH BROWN SPIDER

Tail—Two fibres from the brown mottled partridge's tail
feather.

Body—Dark hare's ear mixed with a little claret wool,
ribbed with yellow silk.

Hackle—Brown partridge

No. 11.—BLAE AND BLACK

Body—Yellow silk thread.

Hackle—Black.

Wings—Snipe or starling.

No. 12.—MARLOW BUZZ

Body—Peacock's and black ostrich's herl twisted and run down together, ribbed with gold thread.

Hackle—Dark furnace cock's from tail to head.

No. 13.—COW DUNG

Body—Yellowish brown wool, rather full.

Hackle—A gray partridge's feather from the breast dyed yellow.

Wings—Mavis.

No. 14.—WOODCOCK AND HARE'S EAR

Tail—Two fibres of brown mallard.

Tag—Flat gold tinsel.

Body—Dark hare's ear slightly tinged with dark olive green wool, left rather long at shoulder for hackle.

Wings—Woodcock.

Lake Flies.

No. 1.—FEBRUARY RED

Body—One turn light claret wool; the remainder, light hare's ear.

Hackle—Black.

Wings—The softest quill feather of the pea-hen's wing.

No. 2.—MARCH BROWN

Tail—Two fibres of brown mallard.

Body—Dark hare's ear slightly tinged with claret wool ribbed with gold oval.

Hackle—Dark partridge.

Wings—Hen pheasant's tail.

No. 3.—GROUSE AND CLARET

Tail—A few fibres of yellow back feather from the golden pheasant.

Body—Claret seal's fur ribbed with gold.

Hackle—Black.

Wings—Grouse's tail feather.

No. 4.—TEAL AND RED

Tail—A few fibres of the yellow back feathers from the golden pheasant.

Body—Red seal's fur ribbed with silver.

Hackle—Black and red.

Wings—Teal.

No. 5.—GREENWELL'S GLORY

Body—Yellow silk waxed with cobbler's wax and ribbed with gold.

Hackle—Black and red.

Wings—Water-hen.

No. 6.—HARDY'S FAVOURITE

Tail—Fibres of brown mallard.

Body—Peacock herl, ribbed with scarlet silk.

Hackle—Dark partridge.

Wings—Dark brown mottled turkey's feather.

APRIL

Stream Flies.

No. 1.—RED SPINNER

Tail—Two fibres of a red cock's hackle.

Body—Red floss, ribbed with silver gimp or thread, better with quill dyed red.

Hackle—Red cock's.

Wings—Snipe or starling.

No. 2.—MARCH BROWN (Female)

Tail—Two fibres from the brown mallard.

Body—Light hare's ear slightly mixed with light green wool, ribbed with yellow silk.

Hackle—Brown partridge.

Wings—The soft side of a hen pheasant's wing feather.

No. 3.—COW DUNG

Body—Yellowish brown wool, rather full.

Hackle—A gray partridge's feather from the breast, dyed yellow.

Wings—Mavis.

No. 4.—LIGHT PARTRIDGE AND YELLOW

Body—Yellow floss.

Hackle—Light feather from the breast of the partridge.

No. 5.—WOODCOCK AND ORANGE

Body—Orange floss.

Hackle—The outside feather from the woodcock's wing.

No. 6.—BLUE DUN

Tail—Two fibres from a blue dun cock's hackle.

Body—Water-rat's or mole's fur spun lightly on yellow silk.

Hackle—Blue dun hen's.

Wings—Snipe.

No. 7.—GOVERNOR

Body—Two turns of yellow floss at tail end of body; the remainder, peacock's herl.

Hackle—Red cock's.

Wings—The soft side of a hen pheasant's wing feather.

No. 8.—OLIVE DUN

Tail—Fibres of olive dun cock's hackle.

Body—Dyed olive quill.

Hackle—Dyed olive.

Wings—Snipe or starling.

No. 9.—HAWTHORN FLY

Body—Black ostrich herl.

Hackle—Black.

Wings—Sea-gull.

No. 10.—MAY DUN

Tail—Two fibres of a yellow cock's hackle.

Body—Yellow floss.

Hackle—Yellow dun.

Wings—Snipe or starling.

No. 11.—SAND FLY

Body—Light hare's ear fur ribbed with yellow gimp or thread.

Hackle—Light ginger

Wings—Mavis or landrail.

No. 12.—WICKHAM'S FANCY

Tail—Two fibres of a red cock's hackle.

Body—Flat gold tinsel ribbed with gold gimp or thread.

Hackle—Red cock's, run down body.

Wings—Snipe or starling.

No. 13.—IRON BLUE DUN

Tail—Two fibres of a medium olive cock's hackle.

Body—Mole's fur spun on red silk, showing red silk at tail end of body.

Hackle—Medium olive cock's hackle.

Wings—Feather from the breast of the water-hen tied on with red silk and showing red silk at head of fly.

No. 14.—RED SPIDER

Body—Yellow silk thread.

Hackle—Red cock's.

No. 15.—GRAVEL BED

Body—Light smoke-coloured floss.

Hackle—Black.

Wings—Woodcock.

No. 16.—MARCH BROWN SPIDER

Tail—Two fibres from the brown mottled partridge's tail feather.

Body—Dark hare's ear mixed with a little claret wool ribbed with yellow silk.

Hackle—Brown partridge.

No. 17.—GRANNOB

Body—Two turns of green peacock's herl at tail end of fly; the remainder, blue heron's herl.

Hackle—Ginger.

Wings—The soft side of a hen pheasant's wing feather.

Lake Flies

No. 1.—LORD SALTOUN

Tail—Red breast feathers from golden pheasant.*Body*—Black wool ribbed with flat silver.*Hackle*—Black.*Wings*—Jay's wing, blue.

No. 2.—WOODCOCK AND RED

Tail—Golden pheasant tippet.*Body*—Red seal's fur ribbed with oval silver.*Hackle*—Red.*Wings*—Woodcock.

No. 3.—ZULU

Tail—Red wool (short).*Body*—Black wool ribbed with silver.*Hackle*—Black cock's, from tail to head.

No. 4.—MARCH BROWN

Tail—Fibres of teal.*Body*—Hare's ear slightly tinged with olive-green wool,
ribbed with gold.*Hackle*—Dark partridge.*Wings*—Woodcock.

No. 5.—BUTCHER

Tail—Red ibis.*Body*—Flat silver ribbed with oval silver.*Hackle*—Black.*Wings*—Blue black feather from the drake's wing.

No. 6.—GREENWELL'S GLORY

Body—Yellow silk waxed with cobbler's wax and ribbed
with gold.*Hackle*—Black-red.*Wings*—Water-hen.

No. 7.—WOODCOCK AND YELLOW

Tail—Red fibres from a golden pheasant's breast feather.

Body—Yellow mohair ribbed with gold.

Hackle—Red.

Wings—Woodcock.

MAY

Stream Flies.

No. 1.—WHIRLING DUN

Tail—Two fibres of red cock's hackle.

Body—Mole's fur slightly tinged with yellow wool.

Hackle—Red cock's.

Wings—Snipe.

No. 2.—STONE FLY

Tail—Two fibres of brown mallard.

Body—One-third yellow wool ; the remainder, light hare's ear ribbed with yellow silk thread.

Hackle—Grizzly blue dun.

Wings—The hard side of a hen pheasant's wing feather.

No. 3.—COACHMAN

Body—Peacock herl.

Hackle—Red cock's.

Wings—White.

No. 4.—LIGHT WOODCOCK AND YELLOW.

Body—Yellow floss.

Hackle—From the inside of a woodcock's wing.

No. 5.—ALDER

Body—Bronze peacock herl.

Hackle—Black.

Wings—Brown mottled hen (or bustard).

No. 6.—DARK WOODCOCK AND ORANGE

Body—Orange floss.

Hackle—The outside feather from the woodcock's wing.

No. 7.—SAND FLY

Body—Light hare's ear ribbed with yellow gimp or thread.

Hackle—Light ginger (cock or hen).

Wings—Mavis or landrail.

No. 8.—PALE EVENING DUN

Tail—Two fibres of a pale straw-coloured cock's hackle.

Body—Pale fawn-coloured wool.

Hackle—Pale straw colour.

Wings—Snipe.

No. 9.—DARK PARTRIDGE

Body—Dark orange floss.

Hackle—Dark brown partridge.

No. 10.—OLIVE DUN

Tail—Fibres of olive dun cock's hackle.

Body—Dyed olive quill.

Hackle—Dyed olive.

Wings—Snipe or starling.

No. 11.—GROUSE AND PEACOCK

Body—Peacock herl body.

Hackle—Grouse.

No. 12.—WILLOW FLY

Tail—Two fibres of a blue dun cock's hackle.

Body—Water-rat's or mole's fur ribbed with yellow silk thread.

Hackle—A lightish blue dun,

No. 13.—YELLOW MAY DUN

Tail—Two fibres of a yellow cock's hackle.

Body—Yellow floss.

Hackle—Pale lemon.

Wings—Snipe.

No. 14.—TEAL DRAKE

Tail—Two fibres of a black cock's hackle.

Body—Black floss ribbed with silver gimp or thread.

Hackle—Black.

Wings—Teal.

No. 15.—JENNY SPINNER

Tail—Two fibres of a white cock's hackle.

Body—White floss silk wound round the shank of hook,
and tied at the thorax and tail with four or
five turns of deep red-brown silk.

Hackle—White cock's.

No. 16.—LIGHT PARTRIDGE

Body—Yellow floss.

Hackle—Light feather from the breast of the partridge.

No. 17.—BLACK PALMER

Body—Black wool ribbed with silver gimp or thread.

Hackle—Black cock's from tail to head.

No. 18.—BLACK GNAT

Tail—Two fibres of a black cock's hackle.

Body—Black ostrich herl.

Hackle—Black from back of a starling.

Wings—Snipe.

Lake Flies.

No. 1.—GOVERNOR

Tail—Fibres of red cock's hackle.

Body—Two turns yellow floss; remainder, peacock herl.

Hackle—Red.

Wings—Hen pheasant.

No. 2.—CHALLONER

Tail—Red ibis.

Body—Yellow wool ribbed with gold.

Hackle—Red.

Wings—Hen pheasant (the hard side)

No. 3.—GROUSE AND GREEN

Tail—Brown mallard.

Body—Green wool ribbed with silver.

Hackle—Black.

Wings—Brown mottled feather from the grouse's tail.

No. 4.—WOODCOCK AND WILLOW

Tail—Fibres of a blue dun cock's hackle.

Body—Peacock quill.

Hackle—Blue dun.

Wings—Woodcock.

No. 5.—HECKHAM PECKHAM

Tail—Fibre of red cock's hackle.

Body—Red seal's fur ribbed with silver.

Hackle—Red.

Wings—White tip feather from the duck's wing.

No. 6.—TEAL AND BLACK

Tail—Fibres of black cock's hackle.

Body—Black wool ribbed with silver.

Hackle—Black.

Wings—Teal.

No. 7.—ALEXANDRA

Tail—Fibres of sword peacock.

Body—Flat silver ribbed with oval silver.

Hackle—Black.

Wings—Sword peacock with two fibres of red ibis at each side.

JUNE

Stream Flies.

No. 1.—BLACK AND BLUE

Body—Yellow silk thread.*Hackle*—Black.*Wings*—Snipe or starling.

No. 2.—HOFLAND'S FANCY

Tail—Two fibres of a red cock's hackle.*Tag*—Flat gold tinsel.*Body*—Red-brown floss.*Hackle*—Red cock's.*Wings*—Woodcock.

No. 3.—BLACK AND SILVER (HARDY'S)

Tail—Two fibres of a black cock's hackle.*Body*—Flat silver tinsel ribbed with silver gimp or thread.*Hackle*—Black.*Wings*—Snipe.

No. 4.—RED AND SILVER (HARDY'S)

Tail—Two fibres of a red cock's hackle.*Body*—Flat silver tinsel ribbed with silver gimp or thread.*Hackle*—Red cock's.*Wings*—Snipe.

No. 5.—BLACK SPINNER

Tail—Two fibres of a black cock's hackle.*Body*—Black floss ribbed with silver gimp or thread.*Hackle*—Black.*Wings*—Snipe or starling.

No. 6.—ALDER

Body—Bronze peacock's herl.

Hackle—Black.

Wings—Brown mottled hen (or bustard).

No. 7.—GRAY QUILL GNAT

Tail—Two fibres of a black-and-white cock's hackle.

Body—Stripped peacock's moon feather.

Hackle—Black and white.

Wings—Snipe.

No. 8.—BLACK QUILL GNAT

Tail—Two fibres of a black cock's hackle.

Body—Stripped peacock's moon feather.

Hackle—Black.

Wings—Snipe.

No. 9.—RED QUILL GNAT

Tail—Two fibres of a red cock's hackle.

Body—Stripped peacock's moon feather.

Hackle—Red cock's.

Wings—Snipe.

No. 10.—OAK FLY

Body—Dark orange floss ribbed with black horse hair or black silk thread.

Hackle—Black and red.

Wings—Woodcock.

No. 11.—WELSHMAN'S BUTTON

Body—Copper peacock herl.

Hackle—Black.

Wings—Brown partridge's tail.

No. 12.—LIGHT BROWN SEDGE

Body—Brown fur from hare's face, ribbed with yellow gimp and thread.

Hackle—Brown-ginger cock's from tail to head.

Wings—Mavis or cornerake.

No. 13.—WILLOW FLY

Tail—Two fibres of a blue dun cock's hackle.

Body—Water-rat's or mole's fur ribbed with yellow silk thread.

Hackle—A lightish blue dun, or, preferably, a honey dun.

No. 14.—BLACK GNAT

Tail—Two fibres of a black cock's hackle.

Body—Black ostrich herl.

Hackle—Black, from starling's back.

Wings—Snipe.

No. 15.—MAY FLY

Tail—Two fibres of brown mallard.

Body—Straw ribbed with narrow flat gold and red silk thread.

Hackle—Ginger cock's, and a light gray partridge's dyed yellow.

Wings—Two gray drake's feathers dyed yellow.

No. 16.—WATER CRICKET

Body—Dark orange floss ribbed with black tying silk.

Hackle—Black.

No. 17.—DARK BROWN SEDGE

Body—Dark brown floss ribbed with gold thread.

Hackle—Dark red cock's from tail to head.

Wings—Dark brown partridge's tail.

No. 18.—RED SPIDER

Body—Yellow silk thread.

Hackle—Red cock's.

Lake Flies.

No. 1.—GOVERNOR

Tail—Fibres of red cock's hackle.

Body—Two turns yellow floss ; remainder, peacock herl.

Hackle—Red.

Wings—Woodcock.

No. 2.—GROUSE AND OLIVE

Tail—Red wool.

Body—Light olive seal's fur slightly mixed with light hare's ear, ribbed with gold.

Hackle—Red.

Wings—Mottled feather from the grouse's tail.

No. 3.—TEAL AND GREEN

Tail—Red fibres from the golden pheasant's breast.

Body—Green seal's fur ribbed with silver.

Hackle—Red.

Wings—Teal

No. 4.—SLATER

Tail—Red fibres from the golden pheasant's breast.

Body—Yellowish green wool ribbed with silver.

Hackle—Red.

Wings—Brown hen.

No. 5.—OLIVE QUILL

Tail—Fibres of a cock's hackle dyed olive.

Body—Olive-dyed peacock quill.

Hackle—Olive.

Wings—Snipe or small duck's wings.

No. 6.—STONE FLY

Tail—Brown mallard.

Body—One third yellow wool ; the remainder, light hare's ear ribbed with yellow silk.

Hackle—Blue dun (dark).

Wings—Hard side of the hen pheasant's wing.

No. 7.—GREEN DRAKE

Tail—Two strands from the common cock pheasant's tail.

Body—Straw ribbed with white silk and yellow gimp.

Hackle—Ginger and dark partridge (shoulder only).

Wings—Gray drake dyed olive.

Head—Peacock herl.

No. 8.—MARLOW BUZZ

Body—Peacock and black ostrich herl twisted and run down together and ribbed with gold.

Hackle—Dark furnace cock's from tail to head.

“Spiders” such as were used by Mr. W. C. Stewart, described from models made by Mr. P. D. Malloch.

DARK STARLING

Glossy black hackle from back or breast ; silk, brown or black.

LIGHT STARLING

Hackles from inside of the wing ; silk, yellow.

DOTTREL

Hackles from the back ; silk, yellow. (The dottrel is becoming rare.)

GOLDEN PLOVER

Hackles, black-brown ; silk, yellow.

GROUSE

Hackles from the wing ; silk, claret or orange.

DARK PARTRIDGE

Hackles, dark, tipped with light brown ; silk, black.

LIGHT PARTRIDGE

Hackles, light ; silk, orange or yellow.

LANDRAIL

Hackles from outside of the wing ; silk, yellow.

JULY

Stream Flies.

No. 1.—RED PALMER

Body—Peacock herl ribbed with gold.

Hackle—Red cock's from tail to head.

No. 2.—BLACK PALMER

Body—Black wool ribbed with silver gimp or thread.

Hackle—Black cock's from tail to head.

No. 3.—IRON DUN

Tail—Two fibres of a medium olive cock's hackle.

Body—Mole's fur spun on red silk, showing red silk at tail end of body.

Hackle—Medium olive cock's hackle.

Wings—Feather from breast of the water-hen tied on with red silk and showing red silk at head of fly.

No. 4.—WOODCOCK AND HARE'S EAR

Tail—Two fibres of brown mallard.

Tag—Flat gold tinsel.

Body—Dark hare's ear slightly tinged with dark olive green wool, left rather long at shoulder for hackle.

Wings.—Woodcock.

No. 5.—WOODCOCK AND RED

Tail—Two fibres of a red cock's hackle.

Body—Red floss silk ribbed with silver thread.

Hackle—Red cock's.

Wings—Woodcock.

No. 6.—WOODCOCK AND BLACK

Tail—Two fibres of a black cock's hackle.

Body—Black wool ribbed with silver thread.

Hackle—Black.

Wings—Woodcock.

No. 7.—BLUE AND HARE'S EAR

Tag—Flat gold.

Tail—Two fibres of brown mallard.

Body—Dark hare's ear slightly tinged with dark olive green wool, left rather long at shoulder for a hackle.

Wings—Snipe.

No. 8.—RED ANT

Body—Two turns of sword peacock at tail ends; the remainder, red silk.

Hackle—Red cock's.

Wings—Snipe or starling.

No. 9.—BLACK ANT

Body—Two turns black ostrich at tail end; the remainder, black silk.

Hackle—Black cock's.

Wings—Dark starling.

No. 10.—JULY DUN

Tail—Two fibres of an olive dun cock's hackle.

Body—Water-rat's fur slightly tinged with yellow wool.

Hackle—Olive dun.

Wings—Snipe.

No. 11.—WILLOW FLY

Tail—Two fibres of a blue dun cock's hackle.

Body—Water-rat's or mole's fur ribbed with yellow silk thread.

Hackle—A lightish blue dun.

No. 12.—DOTTREL AND YELLOW

Body—Yellow floss silk.

Hackle—Dottrel, or young starling.

No. 13.—WREN TAIL

Body—Ginger-coloured fur ribbed with gold twist.

Hackle—Wren's tail.

No. 14.—SILVER HORNS

Body—Black ostrich herl.

Hackle—Black cock's (small).

Wings—Cock blackbird.

Horns—Two fibres from a gray drake's feather.

No. 15.—WHITE MOTH

Body—Pink floss, rather thick.

Hackle—White cock's from tail to head.

Wings—White owl.

No. 16.—BROWN MOTH

Body—Brown floss, rather thick.

Hackle—Dark red cock's from tail to head.

Wings—Dark owl's.

No. 17.—SILVER SEDGE

Body—White floss ribbed with silver thread.

Hackle—Pale sandy-ginger cock's from tail to head.

Wings—Corncrake or mavis.

No. 18.—DARK BROWN SEDGE

Body—Dark brown floss ribbed with gold thread.

Hackle—Dark red cock's from tail to head.

Wings—Dark brown partridge tail.

No. 19.—ORANGE SEDGE

Body—Orange floss ribbed with gold.

Hackle—Red cock's from tail to head.

Wings—Corncrake.

No. 20.—COACHMAN

Body—Peacock herl.

Hackle—Red cock's.

Wings—White.

Lake Flies.

No. 1.—BLUE BOTTLE

Tail—Golden pheasant tippet.

Body—Dark blue wool ribbed with flat silver.

Hackle—Black.

Wings—Brown mallard.

No. 2.—ORANGE AND YELLOW WASP

Tail—Golden pheasant tippet.

Body—Half yellow and half red orange seal's fur ribbed with silver.

Hackle—Red.

Wings—Dark teal.

No. 3.—SILVER DOCTOR

Tail—Golden pheasant tippet.

Body—Flat silver tinsel ribbed with oval silver.

Hackle—Blue.

Wings—Gray drake.

No. 4.—BLACK AND ORANGE WASP

Tail—Golden pheasant tippet.

Body—One third deep orange ; the remainder, black seal's fur ribbed with silver.

Hackle—Black.

Wings—Brown mottled hen.

No. 5.—BLACK AND YELLOW WASP

Tail—Golden pheasant tippet.

Body—One third yellow ; the remainder, black seal's fur ribbed with silver.

Hackle—Black.

Wings—Gray mottled hen.

No. 6.—SOLDIER PALMER

Tail—Red wool.

Body—Red wool ribbed with oval gold.

Hackle—Red cock's, from tail to head.

No. 7.—BROWN PALMER

Body—Brown wool ribbed with oval gold.

Hackle—Dark brown cock's, from tail to head.

Mr. Stewart's "Spiders" as before. See June.

AUGUST

Stream Flies.

No. 1.—AUGUST DUN

Tail—Two fibres of a red cock's hackle.*Body*—Brown floss ribbed with yellow silk thread.*Hackle*—Red hen's.*Wings*—Brown mottled hen.

No. 2.—CINNAMON FLY

Tail—Two fibres of a red cock's hackle.*Body*—Fawn floss.*Hackle*—Ginger cock's or hen's.*Wings*—Brown partridge's red tail feather.

No. 3.—DUN MIDGE

Body—Golden olive floss.*Hackle*—Light-blue dun.*Wings*—Snipe.

No. 4.—PRINCE CHARLIE

Tail—Small tuft of red floss silk.*Body*—Red floss silk ribbed with flat gold.*Hackle*—Black.*Wings*—Gray mottled partridge's tail feather.

No. 5.—JENNY SPINNER

Tail—Two fibres of a white cock's hackle.*Body*—White floss silk wound round the shank of the hook, and tied at the thorax and tail with four or five turns of deep red-brown silk.*Hackle*—White cock's.

No. 6.—WILLOW FLY

Tail—Two fibres of a blue dun cock's hackle.

Body—Water-rat's or mole's fur ribbed with yellow silk thread.

Hackle—A lightish blue or honey dun.

No. 7.—BLACK SPIDER

Body—Dark orange silk thread.

Hackle—Black.

No. 8.—ORANGE BUMBLE

Body—Orange floss ribbed with a strand of sword peacock and fine flat gold.

Hackle—Honey dun cock's, from tail to head.

No. 9.—HONEY DUN BUMBLE

Body—Pale yellow floss ribbed with sword peacock.

Hackle—Honey dun cock's hackle of a yellowish tint, from tail to head.

No. 10.—FURNACE PALMER

Body—Peacock herl ribbed with gold.

Hackle—Black and red cock's from tail to head.

No. 11.—HARDY'S FAVOURITE

Tail—Golden pheasant tippet fibres.

Body—Peacock herl ribbed with red silk.

Hackle—Dark partridge.

Wings—Woodcock.

No. 12.—DARK BROWN SEDGE

Body—Dark brown floss ribbed with gold thread.

Hackle—Dark red cock's from tail to head.

Wings—Dark brown partridge's tail.

No. 13.—LIGHT BROWN SEDGE

Body—Brown fur from hare's face, ribbed yellow gimp or thread.

Hackle—Brown-ginger cock's from tail to head.

Wings—Mavis or cornerake.

Lake Flies.

No. 1.—ZULU

Tail—Red wool (short).

Body—Black wool ribbed with silver.

Hackle—Black cock's, from tail to head.

No. 2.—ALEXANDRA

Tail—Fibres of sword peacock.

Body—Flat silver ribbed with oval silver.

Hackle—Black.

Wings—Sword peacock with two fibres of red ibis at each side.

No. 3.—BUTCHER

Tail—Red ibis.

Body—Flat silver ribbed with oval silver.

Hackle—Black.

Wings—Blue-black feather from the drake's wing.

No. 4.—WOODCOCK AND RED HACKLE

Tail—Golden pheasant tippet.

Body—Yellow wool ribbed with oval gold.

Hackle—Red.

Wings—Woodcock.

No. 5.—BLAE WING AND BLACK HACKLE

Tail—Golden pheasant tippet.

Body—Black seal's fur ribbed with oval silver.

Hackle—Black.

Wings—Blæ.

Mr. Stewart's "Spiders" as before. See June.

SEPTEMBER

Stream Flies.

No. 1.—RED SPINNER

Tail—Two fibres of a red cock's hackle.

Body—Red floss ribbed with silver gimp or thread, or peacock quill dyed red.

Hackle—Red cock's.

Wings—Snipe or starling.

No. 2.—WOODCOCK AND HARE'S EAR

Tail—Two fibres of brown mallard.

Tag—Flat gold tinsel.

Body—Dark hare's ear slightly tinged with dark olive green, wool left rather long at shoulder for hackle.

Wings—Woodcock.

No. 3.—BLACK GNAT

Tail—Two fibres of a black cock's hackle.

Body—Black ostrich herl.

Hackle—Black, from back of starling.

Wings—Snipe.

No. 4.—RED QUILL

Tail—Two fibres of a red cock's hackle.

Body—Stripped peacock's moon feather

Hackle—Red cock's.

Wings—Snipe.

No. 5.—OLIVE QUILL

Tail—Fibres of olive dun cock's hackle.

Body—Dyed olive quill.

Hackle—Dyed olive.

Wings—Snipe or starling.

No. 6.—CINNAMON FLY

Tail—Two fibres of a red cock's hackle.

Body—Fawn-coloured floss.

Hackle—Ginger cock's or hen's.

Wings—Brown partridge's red tail feather.

No. 7.—BLUE UPRIGHT

Tail—Two fibres of a blue dun cock's hackle.

Body—Peacock quill.

Hackle—Blue dun.

Wings—Snipe.

No. 8.—CAIRN'S FANCY

Tail—Two fibres of a black cock's hackle.

Body—Dark blue floss ribbed with flat silver.

Hackle—Black.

Wings—Snipe or starling.

No. 9.—GREENWELL'S GLORY

Body—Light yellow tying silk waxed with cobbler's wax.

Hackle—Coch-y-bonddu ribbed with yellow gimp.

Wings—Inside feather of the blackbird's wing tied on in a bunch and then split.

No. 10.—BLUE DUN

Tail—Two fibres from a blue dun cock's hackle.

Body—Water-rat's or mole's fur spun lightly on yellow silk.

Hackle—Blue dun hen's.

Wings—Snipe.

Lake Flies.

No. 1.—GREENWELL'S GLORY

Body—Yellow silk waxed with cobbler's wax and ribbed with gold.

Hackle—Black and red.

Wings—Water-hen.

No. 2.—TEAL AND BLACK HACKLE

Tail—Fibres of black cock's hackle.

Body—Black wool ribbed with oval silver.

Hackle—Black.

Wings—Teal.

No. 3.—WOODCOCK AND HARE'S EAR

Tail—Fibres of yellow from the golden pheasant's back feather.

Tag—Flat gold.

Body—Hare's ear lightly mixed with olive green wool.

Wings—Woodcock.

No. 4.—GROUSE AND CLARET

Tail—Fibres of yellow from the golden pheasant's back feather.

Body—Light claret seal's fur ribbed with oval gold.

Hackle—Black.

Wings—Mottled feather from the grouse's tail.

No. 5.—BUTCHER

Tail—Red ibis.

Body—Flat silver ribbed with oval silver.

Hackle—Black.

Wings—Blue black feather from the drake's wing.

No. 6.—BLAE WING AND RED HACKLE

Tag—Flat gold.

Body—Dark olive tying silk.

Hackle—Red.

Wings—Blae.

No. 7.—SAND FLY

Body—Light hare's ear ribbed with gold.

Hackle—Light red.

Wings—Corncrake.

CHAPTER XII

ETIQUETTE OF THE SPORT

Misgivings—Natural Philosophy in *The Times*—Rising Courage
— Let us Consider — Influences of London — Physical
Fastidiousness — Psychical Phenomena — Analysis of
Purism—Are Trout Taught by Experience?—Do They
Inherit Acquired Cunning?—The Educated-Trout Notion.

COURAGE was called for at the close of last chapter. Flies having been considered, the next subject must be other lures, and none of these escapes the practically unanimous disapproval of the Southern School, trout-fishers resident in London. The gravity of the situation pressed upon me. Had I not already, over *Trout Fishing*, sufficiently incurred the frown of the sportsman whom *The Field*, with sympathy, calls “the serious-minded dry-fly purist”? Had not that important person given the world to understand, through the sturdy pen of Mr. A. E. Gathorne-Hardy, that, having fished with damp flies

on a dry-fly stream, I was "somewhat akin" to a poacher? If a dipping fly was an offence, what would be thought of lures still farther from the odour of sanctity and paraffin?

While these misgivings were heavy, the postman brought *The Times*. With a feeling of relief from anxiety, I quitted the writing-table for an arm-chair by the fireplace. To calm the mind, I would read the Literary Supplement to begin with. The very first paragraph sent a thrill through brain and body. It ran thus: "Nothing in history is more mysterious or more attractive than the recurrence of these periods, always short, when science and the arts seem really to be born again. For our part, at the back of them we divine some great upheaval in philosophy, some eruption of general ideas, new, and, so to speak, explosive, or at least active. Biologists inform us that, in animal life, a sudden change of diet is favourable, because the cells of our structure become so staled and satiated with their habitual food that they cease to assimilate the nourishment which it continues to contain; the man who starves on his stalled ox may flourish on a dinner of bitter herbs. And so, in the larger structure of society, a certain callousness prevents our coming in contact with truths, when they are traditional and timeworn to excess; use and wont

have dulled them ; they nourish and augment us on longer ; and we formulate them half unconsciously, with so trifling an expense of mind that our faculties dwindle from lack of exercise." What reflection could have been so stimulatingly opportune ? The subject which *The Times* was preparing to discuss was not, it is true, ours. It was The Secret of the Renaissance as affected by Mr. George Wyndham's *Ronsard and La Pléiade*. Still, what *The Times* said was not less applicable to Angling than to Poetry. Thoughts that had long been waiting the spark that would crystallise them suddenly took definitive expression. "It is clear," I said to myself, "that Angling needs a renaissance. Purism has the sport in bondage." Sternly I rebuked myself for having wavered. I would be up and at the Purist whenever I had read the wise old journal. I would analyse the state of his mind. Of course, I would deal with him, as Walton impaled the frog, tenderly and as if I loved him. That would not only be the well-mannered method. It would be the just method also. The Purist was in error ; but error, as a rule, was no more than failure of honest minds to perceive the truth.

"Our faculties dwindle from lack of exercise." Those which relate to Angling cannot be properly exercised in London, where the conventions are

formulated. London is a peculiar place. It has a double influence on a man's temperament.

It has a physical influence. The climate, though much better than that of any other great town in the kingdom, gradually enervates. Fare that in the country you accept as wholesome and to be relished appears coarse in Town. By and by the catering of even a first-class club is insufficiently dainty, and only the meals at the latest restaurant are eatable. There is no affectation in this process. It is a natural manifestation of a peculiar jading of the senses which London produces. The effect on the mind, when suddenly brought to the surface, is striking. For example, at luncheon I saw a worm among the watercress. The shock was terrible. I summoned the steward by a gesture, and pointed to the plate. When he beheld the worm the good man's features were transfixed with horror. Nearly half a minute passed before he could order a waiter to remove the plate, and then he could do so only in dumb-show. As I left the awful scene I had no expectation of ever being able to eat again. In the smoking-room, shortly after, the incident was earnestly discussed. Statesmen, judges, journalists, barristers, clergy, merchant princes, and stockbrokers were unanimous in viewing it as grave. A worm in the watercress! What would happen next? Even

as democracy, when our arms are severely defeated anywhere, calls upon the Government to resign, there was a general feeling that the Committee "must go"; but a little calm reflection showed that their retirement would be no consolation and no assurance. The thing was an irremediable calamity.

After a sojourn in rural regions, the consternation caused by that worm is amazing. It would cause none now. It was a pink and lively worm. If I met a similar one now, either I should put it in my pocket, lest it might be of use on the river in the afternoon; or, should there be present a lady of particularly deserving beauty or good nature, I might offer it to her.

London induces a physical fastidiousness which can be understood only by living there for a few years, living in the country for a considerable time, and analytically comparing the phenomena of the two modes of temperament that successively assert themselves.

Then, London has a psychical influence. Habitual residents in it have a generous and alert brightness of mind that are not to be found elsewhere. Within their own geographical sphere, educated men in Town are wholly without intellectual arrogance. Each realises that possible knowledge is so great that his own is probably small. The

average Londoner is much more modest than the average countryman. His intellectual susceptibility is in a certain respect enfeebling. It renders him over-ready to accept conventional understandings. He is at once exceedingly liberal in spirit and exceedingly orthodox in assumption. He would suffer much rather than deviate, in thought or deed, from the etiquette of society or of sport. In that relation he does not exercise his faculties at all. His submission to authority, to the general opinion of his class, is absolute. It is unquestioning. It is a partial paralysis of the mental faculties through excess of amiability.

This is amusingly evident in the modern literature of Angling, much of which, as a great many of our most eminent trout-fishers live in the Capital for the greater part of the year, is written under the London influences. It has a significant phraseology.

There is, for example, the generic name of our subject, "purist." In no other relation of life could a man apply it to himself without incurring the ridicule of his fellows; yet *The Field* and other authorities are not joking when they use the word to indicate the angler whose principles are those of the Southern School. They are in solemn and sympathetic earnest.

Then, there is the Educated-Trout notion.

That never stales. It has an irresistible fascination for the writers of the school. For many a year, bedight in exultant euphuisms, it has been constantly reappearing in the literature of the sport. It still thrives, and it still inspires the Southron to his finest flourish of phrasing. "After a number of changes of fly and frequent periods of rest for the fish," says Mr. Halford in *The Country Life Library* volume on Fishing, "the angler may at length opine that it is not good policy to go on educating this particular member of the great family of Salmonidæ." Mr. Halford is comparatively sparing in humorous elegancies of expression; otherwise, that fish would have been called "Mr. *Salmo Trutta*"; in the writings of the less restrained authors of the fashionable school, "*Salmo Salar*, Esq.," is a name hardly less familiar than "Mr. John Brown" is in the newspapers. These jocularities are a natural efflorescence from the root notion. If trout become educated, it is a matter of course that we should attribute to them individualities tending towards human knowingness. To be sure, even if the fish have the capability which is assumed, "education" is not the word that fits the case. "Education" means a leading-out, a development of natural capacities; teaching the trout to know an artificial fly at sight is a

putting-in, an infusion into the trout's brain of something not there present in the germ. However, as both our Houses of Parliament and all the ecclesiasts have been for years making the same mistake, describing as "the Education Question" a dispute over theological creeds, which are things put into the human mind, not native talents drawn out, we need not worry about the Purist's words.

What we have to deal with is the Purist's meaning. That is what we have to analyse. You never find it exactly stated in his writings; but it comes out in his conversation, of which I have been carefully taking mental notes.

By "educated trout" he means trout that have an especial aptitude for distinguishing between flies and effigies of flies. When you ask how they have acquired this especial aptitude, he tells you that they have done so partly by experience and partly by heredity. The fish have been raised and hooked and lost; that partly accounts for the accomplishments of the present generation. For many years their forebears have been familiar with the angler's lures; that has induced a hereditary power to detect false flies among the real. Further, the educated-trout area is not co-extensive with the country. It is the chalk-stream region in the south of England. It is there only that education is general. Beyond

that region you do now and then come upon a fish that has the rudiments of learning; but the commonalty of trout outside are as it were illiterate.

That is the Purist's understanding, his settled conviction. Let us examine it clause by clause.

The chalk-streams, it is estimated, contain on the average 25,000 trout to the mile; the number of anglers who fish on them is not more, on the average, than four a-mile a-day. Now, if four a-mile fish on the chalk-streams every day from the beginning of April until the end of August, how many trout has each to raise and prick in order that the whole tribe may be educated? The problem is slightly complicated by the consideration that some of the fish are landed, and that trout in the basket do not add to scholarship in the river. Leaving the captures out of account, which is perhaps a reasonable plan, we find that each angler must prick 40 fish a day and inflict a fraction of a fright on another. That is his duty in the cause of Education. Does he do it? The task is not impossible, and we may not hold it to be left unfulfilled; but when the Purists realise that each of them is accountable each season for 6520 trout, a few creeled and the rest affrighted, a half of their theory must seem imperilled.

The other half is unquestionably in that plight. A little scientific knowledge would have prevented

the belief that trout have an inherited talent enabling them to tell an artificial fly at sight. A trout that is pricked may conceivably become shy; but that it can transmit to its young a gift of detecting lures is not to be supposed. "Acquired characters," talents or incapacities produced in individual creatures by unnatural environments, are not transmitted; artificial flies not being naturally in the environment of the fish, a trout's knowledge of them is an acquired character; therefore, the knowledge ends with the life of the individual trout, and has no influence on the nature of its progeny.

The educated-trout notion, which thus, when examined, tends towards disintegration in the place of its origin, becomes even more obviously questionable when we are farther afield. Unwillingness to rise at artificial flies is held to be the evidence of education. Well, now, if in respect of his particular measure of this unwillingness the Hampshire two-pounder is entitled to a personifying name such as we have noted, what designation would the thoughtful Purist apply to the six-pounder of the Highland lochs? As the heavy Highlander does not rise at all, nothing less than "The Right Honourable *Salmo Trutta*, M.A., LL.D., D.C.L.," would suffice.

Even the Purist, with his mind stirred gently, would perceive that to be extravagant. It is because

after attaining a certain weight they cease to feed on insects that the Highland trout do not rise at artificial flies. It is not because they have been pricked. Probably they have never felt a hook. Perhaps they have never even looked at one. Their stolidity is not critical or prudential. It is obese contentment with fare more substantial than insects. "Education" has nothing to do with it.

There is, indeed, some cause for thinking that education may have nothing to do with the behaviour even of the Hampshire trout. To say that there are two sides to a question does not always exhaust the possibilities. Some questions have more sides than two. This problem of the fish and the fisherman is one of them. On finding the trout of any river very difficult to entice, the angler follows a plausible course of thought in saying that they are "educated." "Either the trout perceive your lure to be a hook," he will say, if you express doubt, "or they don't." That seems to be clinching logic; but it is not. There is a third possibility. It may be that the trout see no more than that your lure is not a fly. There is a wide difference between that negative cognition and a knowledge that the lure is a hook tricked out with fur and feather to seem a fly. It is easy to imagine that the trout are often able to gain the negative

knowledge. Deftly made though they are, our lures are clumsy in comparison with the flies imitated. No bird has a feather of such delicate texture as an insect's wing, and nearly every lure has more legs than any fly. It is not difficult to believe, then, that when a trout allows your lure to pass unheeded he does so because he sees that it is not a fly. To believe that he sees it to be a hook is much more difficult. That belief would involve attributing to the trout one of two gifts. We should be attributing either inherited instinct or memory of his own experience of hooks. We have seen that the instinct cannot be attributed. Can the memory be? That is doubtful. The thought that trout have memories of adversity, memories enabling them to be sagacious against a temptation similar to that which led to it, is not easily reconciled with the familiar fact that many a fish is caught on a lure identical in pattern to one that was left in his lips a few minutes before. It is not easily reconciled, either, with the fact that trout hardly ever take an artificial worm attached to a Stewart-tackle. The hooks that hold a real worm are not less obtrusive than those which hold the effigy; yet the one is snapped at and the other is ignored. Therefore, it cannot be the hooks that make the artificial lure untempting. What does that must

simply be some readily-detected discrepancy between the appearance of the worm and that of the cunningly tinted india-rubber. Then, why do the trout as a rule reject a lure in imitation of a fly that is not in season? We know the generally-accepted explanation. It is not that the trout see the lure to be a thing containing a hook: they take it readily enough at the proper time. It is that the fly of which the lure is an effigy is not in season. That is the obvious answer to our question, the answer which every angler will give; but it is not the complete explanation. To many creatures fruits out of season, far from being despised, are especially welcome. It is not at all certain, then, that the untimeliness of your lure is the cause of its being rejected. A cogent surmise is that, being unlike the flies on or in the water, it is dismissed by the trout as not being a fly at all. What does this imply? It implies nothing less than the possibility that the trout does not remember the aspect of the flies on which in their season he fed freely.

The educated-trout theory has to undergo a still more crucial test. Are the fish of the chalk-streams really more skilful in distinguishing between insects and lures than the fish of other waters? After fishing in nearly all the streams of Hampshire and in many streams elsewhere, I do not think they are.

Indeed, I am certain that they are not. They are not a whit less ready to rise at flies than the trout of slowly-moving waters in other parts of the country. Any one who finds it difficult to catch three brace of large trout a day on the Test or the Itchen will find exactly the same difficulty on calm reaches of the Tweed or of the Tay. It will be said, "Even if this be admitted, it is a fact that the trout of mountain or moorland streams rise at artificial flies much more eagerly than those of much-fished rivers in the plains: how is that to be accounted for?" It is easily accounted for. The rivers in the plains provide much more food for the fish than the upland brooks. Often there are myriads of flies on the brooks; but usually, I think, there is not much else to eat. The rivers, besides being equally well stocked with flies, have great stores of more substantial provender. Consequently, whilst the upland trout are always ravenous, the lowland trout, except on a few occasions, such as the coming of the Mayfly, are as a rule comparatively languid in their appetite for insects.

The general belief that the trout of the plains have become "sophisticated" is not only illusory but also capable of explanation. It arises from contrast between the ways of trout in lowland rivers, where anglers are frequent, with the ways

of trout in upland brooks, where anglers are not frequent. It includes an assumption that the eagerness with which the upland trout rise at lures to-day indicates the manner in which lowland trout rose long ago. There is no warrant for this belief. The ways of the upland trout afford no indication of the habits of the lowlanders in times gone by. For the reason mentioned, the difference in feeding, it is certain that the well-nourished fish of the rivers never at any time rose at flies so freely as the hungry fish of the brooks now do.

Indeed, it is questionable whether the trout of the rivers have changed their habits at all. They are fewer as a rule, and baskets are smaller; but there is no proof that they rise less well now than they ever rose. There is not even a probability that they do. Any one who still clings to the theory that wild trout gain astuteness through suffering from lures will find its hold on him relaxing when he experiments on a mountain water. Six pricks in a minute should surely, if anything will, teach a trout to be suspicious of the lure; but often he will rise at least six times, as a grayling sometimes does, before giving over or being caught. The river trout is as a rule less persistent in attack upon the lure; but that shows only that to him a fly is not desperately desirable.

It would seem, then, that the understandings of the Southern School, springing from a local state of mind which lasts only until a change of residence, are contradicted by the facts of nature. Thus far forth, Purism is without justification. Perhaps, having regard to this, the Purist will hesitate before again drawing his pen in anger at the mention of other lures. Some of them can be defended.

CHAPTER XIII

LURES THAT SINK

Minnows—On Highland Lochs—Trolling Rods and Tackle
—How to Catch Minnows—Two Great Trout at Once—
An Exciting State of Affairs—On Rivers—Creepers—
Gentles—Earth Worms—On Lakes ; on Rivers—In Low
Water—In Flood—Scene by the Riverside—Prejudice
Dissolving in the Open Air.

On certain waters the minnow is deemed a necessary lure. These waters are Highland lochs of the class upon which we have already dwelt. They hold a great many trout ; but, as has been mentioned, only the smaller fish rise to the surface. The heavy trout take the minnow almost as eagerly as the light ones take the fly. Every day for a fortnight this was on two occasions made comically evident to a friend and myself at Loch Lubnaig. We fished with fly. Another angler, staying at the same hotel, used minnow. His trout, displayed on the hall table in the evening, were invariably, each and all of

them, three sizes larger than ours. Even as it was impossible for us to catch fish above a well-defined average of weight, it was impossible for the other man to catch fish under an equally definitive average considerably higher. Not far from Loch Lubnaig there is a private loch on which the same rule is more strikingly manifest. There, only a few of the trout that come at the fly are over $\frac{3}{4}$ lb. ; but a fish of some weight between 2 lb. and 8 lb. is almost certain to be the reward, within an hour or so, of any one who puts out a minnow and manages the lure with skill. Even in the Highlands, and well up among the mountains, there are lochs where the fly-fisher meets much better fortune, and catches trout both great and small. Most of these are waters in which alien fish have been planted. From this it is reasonable to infer that the trout which are native to the Highland lochs naturally cease to rise at fly after having attained a certain very modest weight. It seems equally reasonable to try for a few of them, now and then, with the only lure that gives a chance. The stock will not be sensibly weakened by your success. It should not be supposed that the large lake trout are old and flabby, unfit for either the dinner-table or the glass case. As a rule, they are of extraordinary beauty in form and colouring. There must, of course, be

old fish in the lochs, lank and black and flabby; but I have never seen one of these taken on a minnow. The lake fish which that lure attracts are as a rule in the pink of condition.

Angling for them with minnow is easy work. At the end of about thirty yards of line, the lure trails after the slowly-moving boat. All you have to do to begin with is to sit at your ease, rod in hand, until a violent tug shows that it has been seized. Then sportsmanship comes into play. The fish may rush off in a direction other than that in which the boat is moving. If so, the tackle will break unless you have presence of mind enough to let the reel spin instantly and freely. Almost every Highland loch has trout large enough to break salmon gut in mismanaging hands; and your gut must be much finer than that. Except in time of high flood, the water of these lochs, though dark when viewed from above, is very clear, and, thus, the finer the gut the greater the probability of sport. Drawn gut is too fragile, and the thinnest undrawn is too weak; gut two grades stouter than the thinnest undrawn meets the needs of the occasion. It is well not to use a fly-rod in minnow-fishing. The weight of the lure and the line would keep it constantly curved in one direction, and that would be injurious. Rods specially made for trolling are

stouter and shorter than fly-rods. Naturally, also, the line for trolling should be much longer than that which suffices in fly-fishing. Should you hook a six-pound trout or a considerable ferox, 100 yards may prove not an inch more than is needful. On the bank of a river, you can, by running, keep up with the wildest fish; but on a lake, especially if you have to turn, you lack this advantage, and must trust to the resources of the reel.

The minnow may be either natural or artificial. Which is better? On this question I have made a discovery. As Highland lochs, being far from towns, are much less fished than lowland lochs, one might take it for granted that if artificial minnows can be expected to do well anywhere the Highlands are the place for them. That is not the case. The Highland loch trout are so little attracted by artificial minnows that it is almost always useless to try them with one. On the other hand, the fish of lowland lochs, such as Lochleven, sometimes take artificial minnows with avidity.

Neither in the one region nor in the other is the artificial minnow so effective as the natural. The only reason for having artificial lures is that the natural are not always easy to come by. Outside Ireland, in which the little fish is very rare, there are minnows in almost all the lakes of the kingdom;

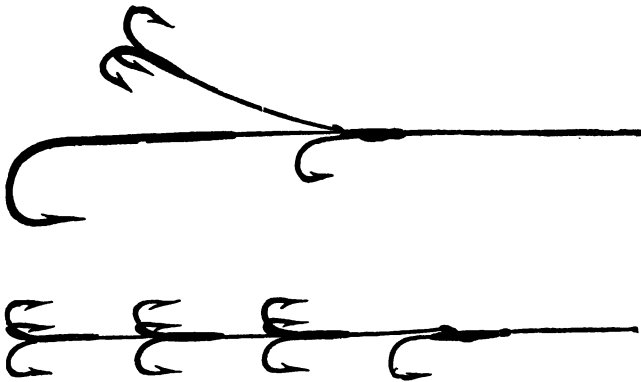
but they are not easy to find, and, when found, they are troublesome to catch. As sparrows, finches, and other small birds do, minnows, I think, are disposed to make their homes in neighbourhoods frequented by mankind. I have often noticed that there is usually a shoal of them close beside the place where a boat, when not in use, is accustomed to lie. Soon after the boat is out on the lake, they swim over where it has been. They seem to be looking for any tid-bits that may have been churned up by the keel. Minnows are very inquisitive, and that enables you to capture some if you have a little time to spare. You put crumbs of bread into a large clear-glass bottle, tie a string round the neck thereof, and, keeping the other end of the line in hand, drop the trap where minnows are or may be soon. Whenever they see the bottle, they wish to get at the crumbs; and whenever they find the entrance, in they go. That is your chance. Jerk out the bottle, and perhaps you shall have baits sufficient for a day. Then, minnows are sometimes to be taken in a small-meshed net.

It will, of course, be understood that the minnows are not to be impaled alive. That would be heartless treatment. Still, the brighter the minnow the greater is its attraction for the trout; and therefore, as minnows lose colour soon after dying, they should

be kept alive, until needed for immediate use, in a pail of water or in a well of the boat.

A small trout is a good substitute for a minnow.

The tackle on which a minnow may be mounted is of great variety. I give sketches of what seem from experience to be the best flights. The minnow



MINNOW FLIGHTS

must be so put on the hooks that it curves slightly towards the tail. This is in order that it may spin when being drawn through the water. A river trout lying in some quiet hole will take a minnow gently dangled up and down, even if it be uncurved and obviously dead; but in trolling the lure will be ignored if it does not spin. The trace has two small swivels, placed where, on a cast of flies,

the droppers would be; the action of the swivels prevents the reel line and the gut from being twisted by the spinning of the lure.

In relation to small lakes in the lowlands minnow-fishing may be objected to with good reason. In the course of a day a single fisherman, afloat and active, could disturb all the trout in the water. In the Highlands the subject has a different aspect. What are you to do when, having been fishing with fly, you find yourself at the end of a loch four or five miles long? Are you to sit still, doing nothing, while the gillie rows back to the beginning of the drift? It is almost useless to cast flies during the voyage. Why not let out a minnow?

A case in point comes to memory.

One bright July day, drifting down the private loch mentioned a few minutes ago, I fell in with Mr. Tom Usher and Mr. James Lyle, seated at luncheon under a boulder by the shore. They were without a gillie, and so was I; and, as the breeze had risen so much that it was not easy to fish and manage a boat at the same time, I joined them for the afternoon; one of us would keep the oars in hand while the others fished. The baskets, already well plenished, were nearly full when we reached the end of the loch. Most of the trout were about $\frac{1}{2}$ lb.; between that and a little over 1 lb. there were

perhaps a score. It would take two hours to be back to the head of the loch. With the trout in such a mood, what a misfortune it would be to lose the time! The thought was so urgent that ere long my companions were paying out the lines of their trolling rods, while I was rowing up the middle of the loch, which at the east end is narrow. Before we had gone two hundred yards Mr. Usher was excitedly endeavouring to reel in again, and before the fish had shown itself Mr. Lyle was engaged with another. The next half of an hour was good. One trout made for the south, the other for the north; then one ran up the loch, and the other was doggedly going down. While Mr. Usher was imploring me to pull ahead, Mr. Lyle was piteously explaining that all was over unless I did not row at all. This was a case in which Justice would have derived no inspiration from being blind. I found landmarks in alignment, and, pulling just enough to annul the wind, kept our craft stationary. Could the Lord Chancellor himself have arrived at a more clearly equitable decision? The breeze was strong, and the deep-blue racing waves were tipped with sparkling spray. Mr. Lyle's trout leapt gamely now and then. My back being towards the west, I could not see Mr. Usher's; but, despite the noise of the surge against the stones and the incompatible exhortations of my

companions, I knew that it too was leaping. I even knew that it was the heavier trout. Its fallings-back upon the water made a deeper boom than the plunges of Mr. Lyle's. We landed both. One weighed $6\frac{1}{2}$ lb.; the other, $4\frac{1}{4}$ lb. In shape and sheen they were exquisite.

On rivers you use a minnow very much as you use flies when casting across and allowing them to move round and down. The main difference is that the minnow goes much farther into the water. Then, whilst in fly-fishing it is wrong to wag the rod up and down, a motion of that kind seems sometimes to impart attractiveness to the minnow.

From the middle of May until the end of July is the time when trout take minnows freely. If the water is not much discoloured, they show exceptional eagerness when the river is beginning to rise from rain. At that time, as the fish are moving beyond their habitual hovers, shallow water just above the head of a pool is often a "sure find." At all times the large trout that lie in deep water under overhanging banks are particularly apt to take a delicately-offered minnow. These trout, I think, have more than usual of the cannibal strain.

A fine thrill speeds from hand to head when a river fish seizes your minnow. You feel a fierce snap and a heavy plunge, and there you are, on

terms, probably, with one of the largest trout in the neighbourhood !

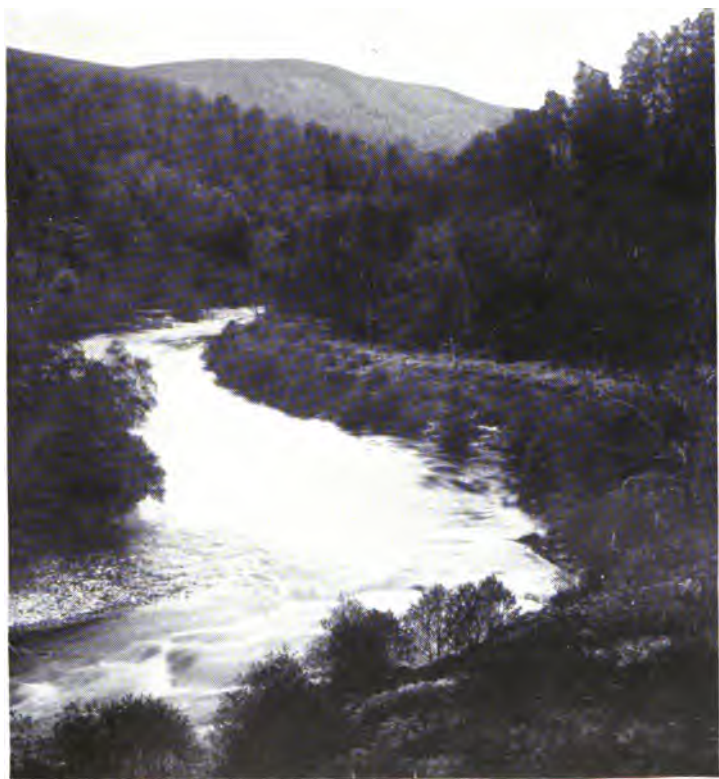
On rivers even more than on lakes, a special rod is desirable in minnow-fishing. On a lake, the boat moving, you can get out the lure and the line without using force ; but when you are on the bank of a river you must use force. A fly-rod should not be put to the strain that is necessary there. A minnow, artificial or natural, is much heavier than even three flies are. If you try to cast an artificial minnow with a fly-rod, it will frequently catch in the grass behind. If the lure emerges from that risk, to cast it far enough upon the water you must use more force than the rod was designed to endure. Then, if your bait is a real minnow, more than the rod will be deranged : in all probability the minnow itself will be wrenched off the tackle.

A rod such as you use in trolling on a lake will meet your needs by the river ; but on the river it is desirable that you should have a special reel as well. In order that the lure, if artificial, may not foul on the bank behind you, or that, if real, it may remain on the flight of hooks, you must cast in a manner different from that in which you throw a fly-line. The lure, as you are about to cast, hangs about six feet from the tip of the rod ; instead of bringing it round over your shoulder, as you bring a cast of

flies, you swing it out from where it dangles. The difference between throwing flies and throwing a minnow is similar to that between overhand bowling and an underhand shy. In fly-fishing all the line you need is already unreeled when you cast; in minnow-fishing the lure has to take off the line as it flies to the place you aim at. As an ordinary reel does not give off freely enough, "casting reels," some of them very ingenious, have been invented. These allow the line to run off almost as easily as it would if it were lying loose in a tray projecting from your waist. They are to be had at all good tackle-shops.

Creepers are a very effective lure. They are grubs of the Stone-fly, a large brown insect which appears about a month before the Mayfly. They lie beside or under stones near the edges of quickly-running water. Like some other immature insects, they are encased in shells of a peculiar shape. The shells, which seem to be built from minute stones, are brown, neat, and usually about an inch in length.

The shells of Sedge grubs, generally similar, have often what seem to be very thin twigs or other vegetable material in their structure, and are not so tidy. It is well to know the one from the other.



WHERE A MINNOW WOULD DO NO HARM.

From a photograph by Mr. P. D. Malloch.

Grubs of the Sedge-fly, sometimes called "caddis worms," are a good lure for trout; but they are not so good as grubs of the Stone-fly.

The Creeper, which is yellow tinged in parts with brown, is in its season as deadly a bait as can be found. The season is April and part of May. Throughout that time the grubs are nearly full-grown, and trout, especially the very large ones, are looking for them. I have now and then found a creeper's shell in the mouth of a trout; which shows that the fish are sometimes too impatient to wait until the winged Stone-fly, its covering cast adrift, is making its way into the air.

Not a few anglers put the creeper on a tackle of two small hooks, one of them whipped on the gut just above the other; but a single hook, being less cumbersome, seems preferable.

The lure is cast just as if it were a fly; but, of course, it must be allowed to go well below the surface. It is interesting to notice that in deep and sluggish water, where the Stone-fly does not often breed, the trout are not much attracted by the creeper; while in rapids, especially close to the banks, where the Stone-fly does breed, large trout are as a rule unable to resist the lure.

It is noticeable, also, that fish taken on the creeper are almost invariably in forward condition.

Gentles are similar to creepers. How they acquired their name I do not know. Perhaps it was through an effort by some delicately-minded angler to disguise their character. To call them "maggots" would be to proclaim the fact that they are the young of the Bluebottle and reared in corruption.

All living things in lake or stream are clean, and to the nostrils of good report; but that cannot be said of all creatures born on the land. Still, grubs of the Bluebottle can be made to deserve their insinuating name. If you put them into oatmeal they will soon lose all cause of offence. Besides, they are toughened in the process of cleansing, and that prevents them from being easily flicked off the hook.

Gentles are an important resource of the angler. He cannot at all times provide himself easily with either creepers or caddis worms; but he need never be at a loss for gentles. The Bluebottle is fecund all round the year. Certain tackle-shops have the grubs in stock even in the depth of winter, lest customers should wish them for grayling or other fish which are in season when trout are out; and I have never known a butcher who could not, on polite demand, provide a supply by sending a message to the slaughter-house.

May, June, and July are the months during which trout show much interest in gentles. That might be regarded as suggesting that gentles are taken by the fish to be grubs of the Stone-fly or of other aquatic insect, grubs that are maturing then ; but this, I think, would be a mistake. It is noticeable that, whilst grubs of aquatic flies have to be sunk if the trout are to take them freely, gentles, to be successful, do not need to be far below the surface. Indeed, trout often rise at them. That seems to show that the trout take them, at their face value, as being maggots that have fallen upon the water from the banks.

Still, we cannot be certain. On summer nights you may make a heavy basket on the middle of a lake by means of gentles, which, though to be found in many places, certainly do not drop from the sky.

A peculiarity about gentles is that they seem to be more attractive when attached to fly-hooks than when attached to bare hooks. This I cannot explain. All I know is that what I have said seems to be true. So well assured am I that a separate tackle is at least unnecessary, always, when I have a supply in the basket, I put gentles on the fly-hooks as the gloamin' deepens into night. I cannot recall an occasion on which this policy has failed.

When the trout have been freely rising at flies during the evening, they always go on to gentles. Two on each hook are better than a single gentle; perhaps two together are more readily seen by a fish than a single gentle is.

A strip from a white-kid glove is a good substitute for a gentle. Many a basket has been filled by a hook thus adorned. Some anglers say that there are nights on which the imitation gentle is more effective than the real. This is strange; but there is cause for not being hastily unbelieving. Gentles in relation to the trout are mysterious. They are out and about at least as much in the day as in the night; yet it seems to be only at night that they attract the trout. I have hardly ever, even in time of flood, when fish often have an exceptionally versatile appetite, been successful with gentles until after twilight.

Those who cast angle where all fish of the game kind live together will discover, if they experiment in the darkness, that sea-trout and salmon are even more given to gentles than brown trout are. This also is odd. Gentles could as easily reside in the clouds and fall upon the middle of a lake as live in the salt-water, where salmon and sea-trout find most of their food.

Young wasps, similar in shape and in appearance to creepers and gentles, are similarly useful. They are so difficult to obtain that they must have a chapter to themselves.

Earth-worms are in the trout's natural fare. That is to say, some of them are. Worms are of many kinds. Once, at the Zoological Gardens, Mr. Frank Evers Beddard showed to me a glass jar full of preserved specimens. A few kinds were still unrepresented; yet the worms, if I remember correctly, were counted by hundreds. Not all of them would serve the angler. A trout caught in time of flood has in its mouth a great variety of things, and you might incline to believe, examining them, that animal matter of any kind would be a lure; but that belief would not outlast experience. Howsoever freely they may eat of things that are adrift in the water, trout show definite preferences in regard to things offered by the angler. It would be a mistake to suppose that one worm is as good as another.

A large worm is not so good as a small worm. A dark worm, black or blue or purple, is not so good as a light worm, yellowish or pink.

The worms that are most useful are the pink-headed worms, found in rich soil, such as the scrap-

ings from roadways; the black-headed worm, which seems to be most common in garden ground that is not very rich; the brandling worm, which is of purple hue, flat on the under side, and lives under stones or cut turfs by the wayside as well as in damp gardens; and the marsh worm, which is often plentiful in decaying vegetable matter.

The worms good in angling have just been named in what I believe to be the order of their merits. In time of flood they are, as far as the trout are concerned, fit for use as Nature offers them; but in time of drought their appearance is capable of improvement. If they are kept in moss for two or three days they lose all their grossness; they become of brighter hues, even the dark ones changing to pink, and are unquestionably fairer in the eyes of the trout than worms fresh from the soil. Besides, they have become tougher, not so easily jerked off the hooks; scoured worms, therefore, are to be preferred even when the water is rising.

In mountain or moorland streams, the trout of which have too little food, half a worm, or even a smaller bit, will often be snapped at; but on lowland rivers flowing through rich soil you must be careful that the lure is intact. A worm that is mangled by a bite, even slightly mangled, will not

be so readily taken as a sound one, and part of a worm will not be taken at all.

Between lake trout and river trout there seems to be a difference of habit. The lake trout are more eager after worms early in the season than they are in June and July; in these months the river trout take worms with much greater eagerness than in the spring. Then, whilst worms are a means of brisk sport on lakes only when there is a flood, they are very effective on rivers, in June and July, even if the water is low. An exception to these general rules is that in summer the lake trout snap at worms very well when the water is rising from rain. They do so, however, only at certain places. If a flood tempts you to try the lake trout with worms, you should go to the places where the freshened streams are running in. Your chances there are good. They are not good elsewhere. Worms are borne down with the flood water in the tributaries, and where trout see worms at large they will take those which are submitted by the angler; but the flood water of the small tributaries does not penetrate in force very far from the margin of the lake, and thus the trout lying beyond about twenty yards from the shores seem not to expect worms at any time of the season. That, I think, explains why, although I have tried

often, I have never once with worm caught a trout anywhere near the middle of a lake.

On rivers there are two methods of plying the worm. One is for time of drought; the other, for time of flood.

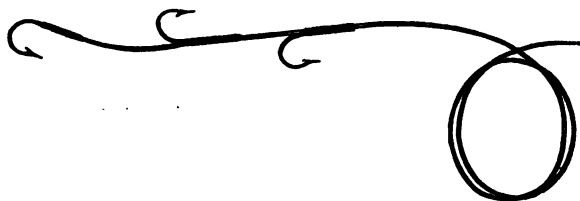
When the water is low, as it usually is during June and July, you use the worm, with a fly-rod, just as you would use the creeper. As you cannot cast quite so far as you can throw a fly, you must in your movements be even more wary than you are in fly-fishing. Excepting where the lie of the land and the water permit you unseen to drop the lure into a likely place, you must cast upstream.

Let the worm fall lightly two or three feet beyond the place at which you know a trout to lie or think one may be; then allow it to come down with the current. You must have as little as possible of the reel line in the water when you are casting straight upstream. Only the gut should be in the water. This is because you never know at what stage in the return of the lure it may come within the vision of a trout, which the thick line would scare. Some day, if you have a genius for the sport, and stand motionless as the stump of a tree, you will be astonished to find that a fish has taken the worm within a yard of your feet. When a trout hesitates under the temptation of a passing

fly he always, or usually, gives his fear the benefit of the doubt; but often, I think, he takes time to decide whether a worm is to be seized or left alone. The chances that he may venture are increased in proportion to the delicacy with which you ply.

Thus, a pellet of lead on the cast is in bright water a mistake. It keeps the worm towards the bottom, and that is well; but, catching against pebbles, it makes the lure go with a jerky motion, which is unnatural and bad.

Then, in similar water, a worm on one small hook is better than a worm or two worms on Stewart



STEWART TACKLE.

tackle. Its appearance is almost completely natural, and the single hook is as a rule sufficient to hold the trout.

How are you to know when to strike? That is indeed a poser. It is a permanent puzzle. The line stops coming down, perhaps gradually, perhaps with suddenness: is this, you ask yourself, a tangle

or a trout? If the line, besides being arrested, twitches, it is a trout. That knowledge, however, is only the beginning of a wisdom that never comes. The twitching of the line conveys no certain information as to what the trout is doing with the worm. He may be only pecking at the skin; he may be only chiveying; in either case to strike would be to snatch the lure away. On the other hand, if one delays he may be off. Then, he may be taking it in and whisking it out over and over again; in that case one would have him if the strike was at the instant of its being in. If only the twitching were followed by a straight pull of a few feet, one would have ease of mind. That would show that the bait had really been seized and that the trout was taking it to his lair. Usually there is no such luck. Usually there is only the twitching. Always on those occasions I am in a quiver akin to that of Tim the terrier when his ears are in a problematical rabbit-hole. It is all a matter of a few seconds; but each of them is as a crowded hour. When to strike? Heaven help me! I don't know. Nevertheless, you do have him in about three cases out of five.

At places where you must cast straight across-stream, or across and slightly up, a pellet of lead on the gut is more needed and less objectionable. It

should be fixed about a foot from the hook. Such places are frequent on large rivers. There is nearly always one of them just below where the bank from which you are fishing bends inwards; at your feet the water is quiet and shallow, and about the middle of the river, or farther over, it is deepening and slowing down into a pool. A sinker is useful there.

A flood in summer affects different rivers differently. In those which run through ploughed plains the first influence of heavy rain is against the angler. Much mud is swept in from the ditches and the drains; the water becomes very thick; the trout are off their food. Whenever the colour of the stream changes from dingy grey to yellow, the trout revive, and if the storm-centre which brought the rain has passed they bite eagerly.

This is the time for worm-fishing in the other mode. You are no longer at any risk of being seen; no longer under any necessity to crawl or crouch. You do not need to cast upstream. You drop your worm wherever you please, and follow it down.

Where shall you drop it? That is the first question in a flood. It is the main question also. Success depends, to begin with, on knowing where the trout are. Some of them will be where they were before the river rose. Trout that at ordinary

times lie in shallowish water remain there in time of flood. They come in more closely to the banks, partly for shelter, and partly because the contents of the ditches and other small tributaries are coming down at the sides; but they do not move very far upstream or down. On the other hand, it is not likely that much success will be met with in deep reaches that have become violent. The trout that are to be found there in fair weather run into the shallows when the river rises. In short, it is in comparatively shallow water that sport should be sought in a flood. This, however, does not mean that you should try only those reaches which are shallow in time of drought. The rise of the water makes new shallows here and there. Some of these are by the edges of the deep cuts through which the water is raging. A mud bank, such as is often formed in the lee of a clump of sedges, is now the bottom of a shallow; and a few trout are sure to be lurking there. Wherever, indeed, the force of the flood is broken, howsoever slightly, it is well to make a cast. Often a very small thing, such as a protruding tuft of grass or a slight hollow in the bank, is sufficient to give a large trout shelter.

Rivers drawing their waters from lands that are not much under the plough, such as some of the chalk-streams and practically all the streams in

hilly regions, do not in time of rain become so deeply discoloured as those of which we have been speaking. A Highland river may rise fully a foot without any noticeable change in its tint. Still, the trout are true to the generic instinct. In every region worms are washed into the streams at every summer flood; the trout know this, and it is worms they want. Whenever the rain begins to tell on the river they prowl in search. Thus, on streams that are not subject to thick discolouration, there is not always a pause between the coming of the rain and the coming of sport. There is an interval only when the atmospherical conditions are unfavourable, and, as the rain is usually a sign that an oppressive spell has been broken, that is not often. All being well with the weather, the trout are quick in acceptance of the angler's invitation.

Sometimes one dashes at the lure two or three seconds after it has fallen. That is because the fish do not always lie at the bottom if the flooded stream is still comparatively clear. You will see that some of them are rising at flies although the water is well above summer level. It would seem that, whilst it is mainly worms they are looking for, they are anxious to miss nothing that is good. At this time, then, except in special places, such as the necks of pools, where the sweep of the water must be

resisted somehow, a sinker is unnecessary. I incline to think that sometimes it puts you at a disadvantage other than that of constantly checking the movement of the lure. It may be that it keeps the lure too low. The trout, or many of them, seem to be poised well above the bottom. Besides having frequently had a nibble just after the line alighted on the water, more than once I have caught a trout on a fly and another on a worm at the same cast.

By a stream which is not much tinged though in flood, it is, of course, well to walk more warily than is needful on the banks of a stream which is discoloured. Either because the extra flow affects their eyes or because in stimulating their appetite it concentrates their attention upon prey, the trout are certainly less quick to catch sight of you; but they do see you if you persist in obtruding yourself upon their notice, and whenever they see you they are gone.

What a scene many a river presents in the time of a summer flood! The banks are studded with anglers. Men who never fish at any other time are fishing then. To some observers the spectacle is shocking; to others it is agreeable. The others include myself. What does it matter that some of these men are poor or otherwise humble, and that

their gear is far from being modern? I cannot perceive that it matters at all. Often one hears or reads that they are "fishing for the pot." This phrase is used as if in mentioning a fact it carried a manifestly just condemnation. The implication and the statement are alike questionable. What harm is there in any man's wishing to catch something to eat? The possibility that the fish-kettles of these anglers will soon be singing is justification of what they are about. It points to a reasonable motive in their endeavour. We have no warrant, however, for thinking that their mood is sordid. Each of them is enjoying the sport as keenly as any member of the Flyfishers' Club enjoys his own. Why, then, it will be asked, do they appear on the waterside only when the stream is in flood? Is it not because the trout are rather easy to take then? I do not believe that to be the explanation. The spirit moving them is, I think, much subtler. They have come out because, in common with the birds, the fish, and all other living things, including the flowers, the grass, the heather, the cereals of the field, they have been aroused to fresh vitality by the storm that has broken the lethargic monotony of summer. They are fishing simply because to fish is at such a time the natural impulse of every natural man near whose home there is a river or a lake. Are they

taking too many trout? They are not taking more than are taken from the chalk-streams when the Mayfly is "up," and the Mayfly period is usually as long as the whole of the summer-flood times. Besides, as has been indicated in another chapter, there is reason for believing that they are not taking more trout than the river can easily afford.

Now read again our excerpt from *The Times* with which the last chapter opened. The need for renascence will become clamorous. The conventions of Angling, and the latter-day literature of the sport, are full of dilettantism, and that is a symptom of degenerate sensibilities.

All the means of sport described in this chapter are means directly suggested, and indeed almost put into our hands, by Nature; yet, though they were thankfully used by our hale forefathers, they are discarded in favour of a fad which has an element of truth in it only on very rare occasions. We have turned our ears and eyes too much away from the hints of Nature, and have lent them too willingly to the effeminate gentility of sybarites. When one thinks about the effects of Puritanism in religion, it is amazing that Purism in sport has had any vogue at all. Besides being absurd, it is a weak and dangerous state of mind.

When it sheds its langour, and drops its

euphuistic habit, on coming out into the open air, it soon finds that there is nothing to be said for itself. Once, in the person of the most delightful of its many amiable representatives, it took me to Hampshire. My friend possessed a fine stretch of stream in the fashionable county, and I was his grateful guest. We fished for three days, and made good baskets. The fourth day, with which our visit was to conclude, was mainly occupied by the margins of a large pool. Some of the trout there are of such unusual size that my friend likes to wind up each of his excursions from Town with a day as it were in their honour. Towards evening I saw, from one side of the pool, that he, on the other, was playing a fish. That was nothing unusual ; besides, I myself was casting at a heavy one, which, if he rose soon, might possibly be in the basket before the carriage came. It seemed unnecessary to cross to the assistance of my host. By and by, however, I thought I saw him beckoning with his head. Yes : undoubtedly he was beckoning. When I was beside him and making ready the landing-net, two passers-by were looking on. "A very fine pike, Bill !" one said, in low, admiring tones. "That 'e are !" said the other. My host was silent. He seemed vaguely troubled. He uttered no reproach as once and again I missed my aim with the net. In fact, he

seemed to be not in a hurry. At length, however, I did get the fish, a giant trout, into the net; laid them both on the bank; and was stooping to take out the hook. My friend also stooped. "Cut the gut!" he whispered. When I held the fish aloft for inspection, Bill and his friend were profoundly impressed. They said they had never seen such a trout before. "That 'ere dry fly is the thing," Bill added, as they moved away. Now, "the thing," as I had seen when cutting the gut just above it, was a Stewart tackle!

In the Club my host had been a Purist of the palest water; but four days of effort in the open air had converted him into a child of Nature. Who shall blame him? The fish weighed all but 7 lb. He had found it impossible to raise the trout at a fly. Probably it would never have been caught on a rod at all if he had not tried another lure. Its remaining in the pool would have done no good either to mankind or to the stream. The tone of my host's conversation as we were on our way to dinner bore unmistakable signs that the prejudice which "prevents our coming in contact with truths" was in solution and more than suspect.

CHAPTER XIV

WASPS

An Attractive Bait—Methods of Plying It—Heavy Baskets—
A Resolve to Emulate—How to Rob the Nest?—A
Project that Miscarried.

WASPS are a bait so interesting that they call for a chapter to themselves. I do not mean the full-fledged insects, effigies of which are often taken by trout of all kinds in lakes and by sea-trout in rivers. Wasps in their youth, the grub stage, are what we have now to consider.

They are attractive to all fresh-water fish, and particularly so to brown-trout. Closely resembling scoured gentles, and not unlike creepers, they are probably taken by the fish as belonging to one or other of those classes of living things. A single wasp dangling on a small hook is enough.

A way of presenting it is to cast it as you cast a worm into a clear stream. Sometimes it is eagerly

snapped at when used on that method. It may be that then the fish take it to be a gentle, which, having dropped into the stream from the land, is buffeted by the currents, and, naturally, not always at the bottom.

Another way is to cast it well across-stream, let it roll round into a deep or deepish bay, in which it will sink, place the rod on the bank, and, keeping as well out of sight as possible, watch the line for indication of a bite. Often I have seen an angler, acting thus, take trout after trout, to the number of a dozen or so, out of a single pool on a summer evening. All of the fish were large. When used in this way, the wasp grub, I think, is taken to be a creeper, which, being native to the bottom of the stream, stays there, moving but little, despite the current.

It is not only when in use that the wasp is particularly interesting. Before catching a trout with him, you have first to catch himself. That is not easy. Arthur Allan, William Rhodes, and I went through considerable stress when first we planned to fish with wasps on a school holiday. Should the affair be recounted here? It will, if set forth, take up a few pages, and be a digression. Still, in reading a book dealing with the principles of a science we are none the worse for an occasional

respite from severe study. Besides, if I do set the affair down, I shall be faithful to the practice of Walton, who tells not only of the actual capture of fish, but also of incidents that took his fancy in pursuit of them. I think I may venture.

Well, then, Allan, Rhodes, and I, who had witnessed Henry Curr, one of our seniors, filling his basket, evening after evening, by fishing with wasps at the junction of the Ladyburn and the Eden, had resolved to go up the water and do likewise in the dam below Russell Mill. Where were we to get wasps? Arthur Allan, enterprising ring-leader in such affairs, mysteriously assured us that we need not worry. He knew a byke. It was on our way to the water. Also, he knew how to harry the nest without risk or loss of time. He had made provision on that score. We should soon see.

Off we started in the high expectation appropriate to a fine summer morning, or, indeed, to any morning when sport or adventure is toward. About half a mile short of the Hangman's Lane, which connects the high road and the low road, Arthur Allan made a sign that we were to be silent and wary, and looked anxiously over the wall into a copse. That was the Long Wood, about the square of an acre in width, running down towards the stream. Over the wall Rhodes and I stealthily followed our

leader. Then he paused to cut a stick of broom with a bunchy head, and so did we, one for each of us. About thirty yards on, Arthur Allan stopped again; pointed to a small hole in a mossy mound; and muttered, "There it is, and all serene."

Rhodes asked, in a whisper, how we were to get at the grubs. Were we to rouse the wasps with a stick, and lash them to earth with the brooms as they came out?

"No," answered Allan, frowning. "No lashing just yet." He put a hand into a trousers pocket, brought it out full of matter resembling coal dust, and went on:

"Gunpowder. Made it last night. Charcoal, sulphur, saltpetre. I tried it. It doesn't explode, exactly. It doesn't go off with a puff. But it fizzles and flares and has fearful fumes. It's the very thing. All the old wasps will be suffocated, and then we'll get the grubs."

Allan explained his plan. He had three pockets full of the munition. Each of us was to have an equal share. His own he would use to lay a thick train from the edge of the byke as far as the powder would go. When that was done, Rhodes and I were to step carefully to the hole and pour our lots in. That might arouse the wasps; but we were never to mind. We should be safe if we bolted immediately

the powder was deposited. He would fire the train the moment he saw us turn.

All went well in the carrying out of this plan. The train extended about five yards. Rhodes and I got our powder into the byke without, as far as could be seen, offending any of the wasps, not one of which had appeared before we fled. Had all the powder run down out of sight, the plan must have been defeated; but the powder choked the hole, which was full to the brim, and thus there would be no disconnexion between the train and what may be called the bomb. The siege was in a promising state.

Arthur Allan was justified in having assured us that we should have time to retreat. He had not exaggerated the peculiarity of his compound. Its combustion was leisurely. Sparkling, sputtering, it gave forth a low hissing sound, and a dense white smoke, as it took fire along the train; it melted and withered as a Pharaoh's serpent acts before being completely consumed; flaring in not a few colours, most notably yellow and brilliant green, the train travelled as it were at the rate of about a foot and a half a minute.

Would the old wasps remain at home until the fire reached their doorway?

That was an anxious question. Our rapt atten-

tion was divided between it and the variegated and fascinating flame. Each of us had one eye on the fireworks and another on the byke.

We were undone. Before the fire was halfway to its destination, there was a movement on or near the surface of the powder in the hole. The wasps were working their way through. In an instant two or three were out, fluttering and buzzing angrily just over the place from which they had escaped. The others would follow immediately.

"Brooms!" exclaimed Allan, in a stern low tone.

With one accord we fell upon the wasps that had come out and any that might be coming. At first the work was easy and completely successful, all the visible wasps being slain or severely wounded; but soon it became manifest that we were engaged in no light undertaking. We could hear the sounds of furious activity underground. At every moment the wasps came up more quickly and in greater force. We had to wield our weapons with rapidity and vigour. That told to the advantage of the enemy. All the powder in the passage suddenly sank out of sight. Our beating of the sandy dry soil had loosened its hold in the narrow channel, and down it had gone.

Perhaps the compound, in its fall, incommoded the wasps; but that did not matter. Any smother-

ing was for a few seconds only. The garrison made a sortie in strength.

‘When a wood-laid street is under repair you may see three navvies driving the same wedge into material that has to be torn up. They are points in a circle. Each has a sledge-hammer, with which he smites the wedge in his turn. The hammers go in a rhythmical rotation. That is how we were placed and acting at the byke. Only, our flails had to go much more quickly than the navvies’ hammers. Wasps are not easily killed. In proportion to their size, they are not less tenacious of life than eels. A good many lying round the hole were apparently dead; but very many, those which had been no more than trounced, were walking away. How long would it be ere these recovered sufficiently to take to the wing and attack us in the rear? Any one who while in hard muscular exercise has found his mind wandering to a problem will realise that this was an uneasy thought. Amid such circumstances the mind, believed to be impalpable, seems to suffer a physical wrench. On we went; on, on, on; lashing, lashing, lashing; and there was not the slightest weakening on the part of the wasps. It was impossible to think of abandoning the attack. Within a minute of our stopping, even if we fled with the speed of hares, the wasps would be on us

bitterly. We had to persevere. As the wasps must come to an end sometime, endurance would tell; but what if the brooms wore out, or if the stragglers returned before——

“Ahem! It’s a fine day?”

The words came from over the wall in a high-pitched voice of sinister tone.

“Fine,” answered Rhodes, without pausing. He did his best to speak in a cheerful and conciliatory manner, such as would, in ready acquiescence, gratify; but the word was uttered so feebly that it could not carry much beyond our little circle.

We knew the voice, and it sent through us a chill which our sweat-sodden garments intensified. I, who chanced to face towards the road, saw the speaker. He was leaning with elbows on the wall, gazing at us with fleering eye. Well did we know who he was that had chanced our way.

It was John.

You will have a good conception of John’s outer aspect if you will kindly recall the portrait of Dirk Hatteraick, smuggler, that stands as frontispiece to *Guy Mannering*. Dirk was of middle stature, thick-set, muscular, of powerful countenance. So was John. The only outer difference between the two was that Dirk’s large features bespoke habitual wrath and John’s were merely mocking. Dirk looked as if

he were always in a rage; John was always ready to become so at reasonable notice.

John, a familiar figure in the neighbourhood, was a resident in the county Retreat for the mentally afflicted. His trouble was not dementia, which is a general collapse of reason; it had its seat in error as to a single subject, and had ripened into a remarkable gift of arguing on any topic connectable, howsoever far-fetchedly, with his grievance. He was, I had heard the elders say, a man of much native shrewdness and even of high intellectual force. John believed that he had been wrongfully deprived of an ancestral estate, and that in compensation for this miscarriage of justice the Crown had vested him in Retreat and the lands attached.

These lands included the Long Wood.

After looking on for a few minutes, John strolled a little way on the road, opened a wide wooden gate giving entry to the field adjoining the copse, and came towards us. I announced his approach. Should we take to our heels? We decided upon the more heroic course. It was, I think, less the consideration of our dignity than the consciousness of being fatigued and scant of breath that kept us where we were.

When he brought to, close beside us, John spoke with notable politeness.

"Micht I ask what ye're daein' here?"

"Trying to get——" said Allan, panting.

"——a few young wasps to——" said I.

"——fish with," Rhodes added.

"Aye: jist," said John, taking a pinch of snuff. "Ye've been tryin' to smeeek oot the auld anes, I observe. I wudna' wun'er if ye've set the wud on fire. In fac', ye hev. Thae dry leaves are smoulderin' vera weel. Hoosomiver, I'll gie ye a bit haund wi' the wasps."

John cut a stick of broom, and joined us. There being now four flails at work, our muscles were perceptibly relieved; but our minds were not much eased. You may as well put your trust in politicians as in the most genial of gentlemen whose minds are alien. You are liable to be led astray as to his intentions. Even the single-subject unfortunate is capable of dark designs. We knew that these were well within the scope of John's abilities. Obeying that peculiar instinct which tempts normally-constituted minds to make a butt of any person whose temperament is singular, sane residents in the neighbourhood, sane in the commonplace sanity that is unimaginative, had played many a practical joke on John; but John's retaliatory actions, which were inevitable though never foreseen, showed high aptitude.

Our misgivings were not baseless. John's politeness had been part of a play. Ere long he had withdrawn from our circle, and, having lit his pipe, was thinking aloud again.

"This kin' o' wark is a' richt for young lads like you, whas airms and backs are soople; but it disna' dae for me. Advice and guid influence are mair in ma line. So I'll e'en tak' occasion by the haun', as the poet says."

Thereupon he applied his broom to ourselves. He walked slowly round, and spanked us, one swish each, in turn. Each of us, at his blow at the wasps, was necessarily stooping; it was then that John's broom smote. If you call up the scene in your mind's eye, you will admit that we were in a mean plight. The physical pain was endurable; but the moral and intellectual damage was severe.

"These," he said, at the end of the first round, "are maybe no sae sair as the palmies ye get at schule, or ocht to get; but dinna' be in a hurry. Bide a wee. We'll improve as we go on. I' the meantime I'm jist makin' shure o' your respec'fu' attention. Ye may wun'er hoo I havena' askit wha ga'e ye leave to be here. Ye wud like me to ask, o' coorse. That's because ye're born leears, ready wi' a fa'se excuse. Nae doobt ye wud ha'e me think that somebody ga'e ye leave; but naebody did. The

grieve an' a' ma keepers ha'e stric' oarders to gi'e nae leave ava!"

Swish! Swish! Swish!

"Ye tell me it was only a wheen wasps ye were efter. That's nae excuse. Hoo dae ye ken I michtna' be waantin' the wasps mysel'? Yet that's no' the pint. The pint is that everything on this estate belongs to me. Tak' an inch, tak' an ell. Ye wudna' stick at the wasps. You wud gang on to the rabbits, the paitricks, and the phaishons. Ye micht e'en tak' the capercailzie that I've got tied by the leg to a tree doon by."

Swish! Swish! Swish!

The second chastisement had been harder than the first. The third was more stinging than the second. John was working himself up.

"Talkin' aboot the capercailzie: Nae doobt ye ha'e the impidence to be thinkin', whaur did I get it? Aweel, I'll tell ye. I snared it at the edge o' Ballo Waater, up i' the Lomond Hulls, whan I entertainit my chief physician and ithers o' my staff to a trip, last Fast Day. If I hadna' foarmal leave to tak' the bird, what business is that o' yours? Capercailzie canna' live near the tap o' a mountain whaur there's nae firs. Lord Bute didna' ken that—the kamsteerie chiel, though a fine scholar. Forby, lairds are lairds, an' no' like common folk. If ae

laird canna' help himsel' when he's visitin' a neebor, wha the de'il is he to help himsel' frae?"

Swish! Swish! Swish!

John was becoming excited. His voice had risen to a roar, and the stripes he bestowed were trenchant.

"I ken na' whaat the world's comin' to," he went on, with an eerie laugh. "I' my young day folks respec't their betters an' the law; but noo, whaat wi' skuilin' o' the lower oarders, free-thinkin', an' a' the rest o't, naebody admits that onybody's their better's, and there's mony that mak' licht o' the law. I oaften read i' the papers that it's thocht to be open to improvement—that there's need for refoarm, as they ca' it—mair espaishally that nae laund or game should belong to onybody in particular. Fine teachin'! But it'll no dae for me, ma young freen's. Tak' that, ye damned Republicans!"

Swish! Swish! Swish!

This time I was almost laid low. Nothing less urgent than dread of falling face-first among the wasps could have enabled me to regain an approximately upright position. Unwontedly tender thoughts passed hurriedly through my head. The paths of domesticity and peace had acquired a wholly new attractiveness. There was Home, for example, where the black cat purred cosily on the hearth-rug, when he was not, with equal comfort, stalking

starlings round the chimney-pots; gently wimpling in the shaded sunlight, the quiet river, not far off, where well-behaved persons could spend many tranquil hours in happiness; even School had suddenly lost obnoxiousness.

These plaintive musings were interrupted by the sound of horses' hoofs. John himself, apparently winded by his last round with the lethal broom, heard the dull galloping thuds when clearing his throat to resume his scurril discourse. He listened attentively; we three went on against the wasps. The sounds approached. Soon the explanation appeared. It was a troop of the Light Horse coming from the west. Would John hail the cavalcade? We ourselves could not dare. Was there any chance that the brave men would see us and intervene?

They did see us. Perhaps their attention was caught by the smoke which was issuing from the leaves and other woodland litter. At any rate, they stopped, looked at us, chatteringly, for a few moments; cantered off, rode through the gateway; dismounted, tied their horses by the reins to trees at the verge of the copse, and came towards us. Their regiment, we learned afterwards, had been to a review at Annsmuir the day before; overnight they had banqueted in honour of a distinguished general;

and that morning they had been putting themselves right by a hair of the dog that bit them. They were in very good spirits.

"What's ado?" one of them demanded. With a throb of relief, I recognised the brisk tones as those of the Farrier Sergeant, whom even then I had the honour to call a friend.

"I'll maybe explain," said John, opening his snuff-box, "when ye tell me wha ga'e ye the richt to speir."

"Come, come! No nonsense," said the Farrier Sergeant. "You can't deceive me. You have been ill-usin' these laddies."

"Whaat if I ha'e? Ma certes! Is't come to this o't—that a coonty gentleman's game preserve is to be open to a'? I'm thinkin' I'll ha'e to ill-use mair than thae young scamps. Wud ony of you swaggerin' loons like a bit fecht afore I ca' my keepers to ha'e ye a' arrestit? I'm gettin' auld; but I'll ha'e muckle plesure in obleegin' ye."

Thereupon John, with conspicuous leisureliness, took off his jacket, and turned to hang it on a tree. The Farrier Sergeant used this pause in the proceedings to my great relief. Grabbing me by the neck, he snatched me away, took my broom, handed it to a trooper, and told him to take my place at the byke.

"Now," he said, "nip off to Captain Bremner.

Ask him to come here. Stop at James Fyfe's, in the Kirkgate, and tell him to bring out the Fire Brigade immediately. Take one of our horses—any of them you like—and be quick."

John, when he was again facing the throng, instantly noticed the change in the arrangement. Instead of enraging him, it moved him to flouts and jeers. Addressing my successor, who was of giant height and girth,

"A bonnie job for a fu'-grown man," he said,—"a sojer—cavalry forby—subduin' insect's. The Licht Brigade o' the Crimea; the Licht Horse o' Fife. Aye. See 'im—hoo nobly he's slauchterin' the Rooshians! That's the billie for the foes o' England! But whaat about this fecht? Wha's to be bashed first? I'm ready. Wha's to——"

Thus far I heard John's speech as I was slipping off towards the horses. The remainder, together with the first-class shindy which promised to follow, was lost to me. Of course, none of the troopers would accept John's challenge; but that certainty did not make peace inevitable. When it should become clear that there was unwillingness to fight, John would force the pace. He would bring one of the troopers, probably the largest, to action by assault. This I was not to see. The Farrier Sergeant had peremptorily ordered me to be gone.

My journey to the town was at least as speedy as he could have wished. Applied to the mounted yeomanry of Fife, "Light Horse" is a figure of speech. The troopers are a body of as buirdly men as you can see anywhere in these blest Isles. They are as tall as the men of the Household Cavalry, and considerably stouter. Thus, their mounts have to be weight-carriers. Accustomed to men of seventeen stone, they are, naturally, resentful of riders who are markedly less substantial. The one that I selected, the first I came to, a mild-eyed bay, was not sedate when, having shortened the stirrups, I scrambled to his back. He began by standing on his hind-legs and on the fore alternately. Then, instead of going through the gate into the road, he went off, at a high pace, through the field adjoining, which was under grass. He leapt the fence at the end of the field, and we were in another wood. The trees brought him to, and peaceful persuasion took him over a ditch into the road. Then he was off again.

At Beech Grove we came suddenly in sight of a large flock of sheep, which, for many yards, filled the narrow way from wall to wall; behind were a shaggy man waving a stick and three dogs barking loudly.

Using every name I could think of, I implored my charger to woa; but he would not.

Widespread death seemed imminent, and I was

wondering how I should be able to provide compensation for such violent disturbance of husbandry, when, just as our fore-hoofs were about to fall upon the front rank, the whole dense mass seemed to become fluid. It parted in twain as if it were the sea and we the Israelites. Not a single sheep was touched.

This performance was strangely restorative of self-respect. I was ready to welcome any further difficulty. If one could ride harmlessly through sheep which seemed packed as tightly as pyramid billiard-balls when in their case, there could be no end to the brilliant possibilities of horsemanship.

These were not to be much further tested. The only trouble which presented itself was, How to stop at James Fyfe's? I had foreseen this for most of the few minutes of our progress. James Fyfe's house was in the middle of the town; there would be people about and looking on; it would never do to be unable to manage at that critical moment. Stop we must, exactly opposite the door of James.

This resolute mode of reflection, which perhaps communicated itself to my handling of the reins, seemed to be felt by the horse. He came to a stop just where I wanted, and stood quietly as I delivered the message of my friend in need, who, among other public capacities was Captain of the Fire Brigade.

Lieutenant Fyfe, in purely civil relationships a

slater and simply James, grasped the situation instantly; ordered small boys to run for this man, that, and the others; and assured me that the Brigade would be on the spot within half an hour. Thereupon, with a military salute, I resumed my way.

Instead of going directly to Captain Bremner, I, being too well shaken to think of returning as I had come, rode into the stable-yard of the Royal Hotel, handed the steed to an ostler, said carelessly that the owner would call for it, and was off before the astonished man could ask for an explanation. Then I made my way to the Captain, whose office was in the County Buildings, within a minute's walk.

When you know that the Captain was Chief Constable of the County, you will marvel that I, involved in an affair capable of being regarded as tinged with criminality, stepped towards him with a light heart. This confidence came from intuition. Had I not seen the Captain, whose pew was immediately in front of my father's, march into Church, Sunday after Sunday, with *The Field* under his arm? Of course, he was not going to read it there; no man in the county was of more strictly correct demeanour than the Captain, and he had an especial esteem for the Canon, our aged clergyman, who was good at golf. He was taking the journal, which regularly came to his office, across the way, to be read at

home in the afternoon. Still, a Chief of Police who did such a thing was not likely to be ill to deal with.

This reflection turned out to be well and truly laid. Standing with his back to the empty fireplace, the Captain, when I had delivered the Farrier Sergeant's message, put, and received answers to, a few questions as to the state of affairs in the Long Wood; but he did not seem to be feeling that either my errand or myself was an annoyance. Some measure of reprehension I was undoubtedly entitled to, and he conveyed it officially, by his tone; but there were on his virile countenance, particularly on his nose, which was Roman, broken, and oddly expressive, actually seeming to move slightly, though involuntarily, at the impulse of certain emotions, signs that he was not yet prepared to institute a criminal process against anybody.

"Well, we'll go," said he at length; and soon we were in the hotel stable-yard, waiting while the ostler who had taken over my brave bay was preparing a carriage and pair. A little later, as we approached the Cross, I saw the Municipal Drummer, arrayed in blue and scarlet and a tall hat, importantly hastening into the dungeons of the Town Hall, there, as we realised a few moments afterwards, to ring the bells announcing Fire. Already the

citizens, among whom rumour on such occasions spreads quickly, expanding as it goes, were hurrying westward. Indeed, all the way to the Long Wood we drove through moving rows of the excited populace.

The group in the copse, when we arrived, was larger than it had been when I had left; so much larger that the Chief Constable and I were able to take places on the outskirt unobserved. We had a strange scene to study. Lieutenant Fyfe had been as good as his word. There, with the Farrier Sergeant plying the hose, were the helmeted Brigade, each member actively at his work. As Rhodes and Arthur Allan were looking on in repose, evidently the wasps had been extinguished to begin with. Now the jet of water was being sent against the burning litter, which received it with a hiss. The trees being green, the fire was not extensive in the upward direction; but the smouldering and flickering area on the ground was large, and here and there a gorse bush was ablaze. It was not the fire or the Brigade, however, that was the attraction to the constantly increasing crowd. John was the attraction. Though his jacket was still off, he had seemingly abandoned the hope of battle. He was still full of scorn, and pouring it forth; but now his endeavour was less to exasperate than to convince. His large and glittering

eyes, which when I had left were moving erratically, out of control, were as conspicuous as before; but now, as he strode about his circle in the midst of the multitude, arguing, exhorting, jibing, he seemed able to direct them as he wished. He was much less an oddity than an orator.

The crowd were not smiling as they listened. They were wrapt in serious attention.

John was bidding them consider the monstrous scandal of their being there at all. Wha invited them, or let them in? Naebody. They had come o' their ain accoont. They were ootragin' the privacy o' a gentleman's grounds; but they had nae thocht o' that. They saw naething by-ordnar in't. In a mainner o' speakin', they were richt there. Nooadays there was nae fixed principle aboot onything—nae true thing that wasna' subjec' to sae mony modifications that the exceptions theirsels had become the rule. He saw this in a' depairtments o' life. He saw it i' the Coonty Boards, whaur chiels like Maister Waldegrave Leslie and Loard Elgin were bletherin' doonricht Leeberalism every week—the doited Whigamores. He saw it in e'en bigger affairs—in the Imperial Paurliament itsel'. Fowr year ago, under the head bummer amang the new-way-o'-thinkin' men, we had slippit awa' frae oor ain grund i' the sooth o' Africa, wi' oor military tail doon,

because we had got a bit lickin' frae the Dutchmen, and were nae langer able to see that richt was richt if sufficeciently tampered wi'. The country wud ha'e to pay sweetly for that humeeliatin' business, though he michtna' himsel' be here to see. An' whaat was the head bummer dain' noo, at that very day? Airnestly talkin' aboot creatin' five hunner Peerages, so as to let him ha'e his ain way in doctorin' the electorate! Creatin' Peerages, an' the country lookin' on quiet! I' the auld days a man had to be a man afore he was made a peer—a guid man i' some way—a bonnie fechter, or a deep thinker, or special fu' o' usefu' knowledge—and when he was made a peer he entered an estaablishment that was pairt o' the constitution, just like the Queen herself, or the Hoose o' Commons; but noo, it seemed, the head man i' that Hoose, though releegious i' his ain queer way, thought himsel' entitled to jink oot o' his defeeculties by meddlin' wi' the ither Hoose, which was better than his ain,—forby bein' aulder and mair honest. Creatin' peers, indeed! Did they see the trees? Could he create a tree? No: he couldna'. Trees couldna' be created in a minute and for a special purpose. They grew, an' if ane o' them was an oak it micht be gi'en some disteenguished use, sic as bein' pairt o' a cathedral or a man-o'-war. It was the same wi' human bein's. Some were naebodies

a' their lives; ithers were somebodies; a few were by-ordnar strong, and becam' peers—no' by creation exac'ly, but by natur', and by the weel-kent custom o' oor auld country. Did they no' see that, the gomerils? Why were they starin' at him, sae dumb and doobtfu'? Were they sayin' to theirsels that i' their ain loose thinkin' and livin' they were the veectims o' this pooerfu' man at the head o' oor affairs, an' to be peetied? He jaloused they were sayin' that; but they needna' say't. It wasna' true. Orators and politeecians, wha worked on weakness to win their ends, no' on strength, fund their stock-in-trade no' i' their ain pows but i' the saft heids o' the people. This man wham they were blamin' wud ha'e had nae influence ava' if the minds o' mony i' the country hadna' been as fushionless as the mind o' himsel'. To think o't—a' that had happened in this auld land, a' that was happenin', a' that was yet to happen—nearly brak his hert; but that mustna' be. If he alloood his hert to brek, or e'en if he were to be doon i' the mooth for mair than a minute, he wud be nae better than theirsels, the feckless bodies. At the same time, it was gey near enough to drive to a madhoose ony man wha had mair than the brains o' a cockatoo and mair than the courage o' a sheep. Was there among them onybody wha denied this? If so, wud he kindly step oot into

the ring, tak' aff his jacket, and staun' up for his redeekilous opeenions? Certes, in sic' a crood——"

"John!"

The interrupting voice, though it had only a syllable to say, vibrated, in deep bass, over the crowd.

It was the Chief Constable's.

Instantly ceasing his declamation, John looked round, obediently, and as if seeking to identify a recognition. Having caught sight of the speaker, he came towards us with extended hands.

"You here, Captain!" he exclaimed. "Losh! I'm glad to see ye. We ha'na' met since the curlin'. It's a joy to ken that I ha'e at least had ae real man in ma congregation." He was shaking hands with great heartiness as he spoke.

"Thank you, John," said the Captain. "I'm always glad to hear your views. They're pretty much my own, though I could'nt put them so well. But to business, old friend. I'm very sorry to learn that all these people are here without leave. We must disperse them. Shall I read the Riot Act?"

"As you will, Captain. I had been thinkin' o' sendin' for a few o' my ain men, to clear awa' this mob, gin I had let them see theirsels in a true licht. But law an' order, Captain,—law an' order! The Riot Act is best, noo that the sensible times are past."

The Chief Constable stepped into the open space in the midst of the crowd, and, holding a blue paper before him, recited sonorously. John, standing proudly by his side, toyed with his snuff-box, now and then nodded in thoughtful approval of the proclamation, and was a model of law-abiding serenity. Some influence radiating from the Captain had quelled the excitement of his ferocious mind. The crowd, of course, knew that the reading was merely a measure taken by the tactful Captain for the succour of the afflicted man; but they listened with grave respect, and with great admiration of the Constable's voice, which was of unusual grandeur. Light Horsemen, Fire Brigade, and civilians, they moved away as soon as the reading was over; while John gave his arm to the Captain, and led him hospitably off towards his palatial home.

There may be some easy way towards becoming possessed of wasp grubs; but I have not yet found it. Last summer I again attempted to harry a nest. Day by day scores of wasps had been visiting a room on the upper floor of the house in which I write; this led to the approximate discovery of their byke, which was somewhere under the slates and water-pipes on the roof. Two painters, two plumbers, several small boys, and I myself, one of us, whoever was leader for

the time, wearing closely-meshed wire-netting over head and hands, attacked as it were with fire and sword; but the colony could not be captured. The sticks with which we poked and slashed at them the wasps seemed to mind not at all, and our blazing torch was a weapon much more ornamental than useful. In short, after suffering many casualties, we had to acknowledge ourselves defeated, and the wasps are still in possession.

The difficulty of providing oneself with wasp grubs may reasonably be deemed not an unmitigated misfortune. It is a zestful preparation for the more peaceful sport.

CHAPTER XV

IMPROVING THE WATERS

Disorganised Rivers—The Cause—Unfortunate Results—
How a Typical Stream has Suffered—Most other Rivers
in Similar Plight—Why Aquatic Flies become Scarce—
Tyne, Liffey, Clyde, and Thames—Tay, Spey, Teith,
and Dee—Incidental Consequences of Derangement—
Signs of Salutary Public Interest—How Derangement
may be Remedied—Fish Culture—Hill Streams—Their
Splendid Promise.

THUS far, by virtue of the subject-matter, we have been able, I think, to maintain a general cheerfulness of outlook. There remains a problem that seems grave. "Where to fish?" is becoming a question not less important than "How to fish?" Already not a few anglers find that it can be answered only by going abroad. There cannot be any doubt that the rivers and rivulets at home are not so attractive as they might be. Since the beginning of last century they have been gradually suffering a change of

character. Long ago they were full and fresh at all times of the year, not often alarmingly high and never alarmingly low; but now the extremes are commonplace. Revisiting almost any familiar river or brook, the shade of an angler of a hundred years ago would find cause for astonishment. Now the water would be much higher than he had ever seen it in his earthly days; anon it would be so low as to be scarcely recognisable. Looking about, he would behold the countryside pretty much as it used to be. What, he would ask, has come over the scene of his well-remembered sport? It is the same water-course; but it is not the same water. The stream rises in time of rain, and falls in time of drought, as is natural; but it rises more rapidly and to a much higher level than it used to rise, and falls more rapidly and much farther. Has the climate changed since his young days? Have the rain and the rate of evaporation become tropical?

It is not the climate that has changed. All that has happened is that agricultural drainage has been thoroughly established. The rains, which used to filter through the land to the rivers slowly, are now rushed off in haste.

From the angler's point of view, the change is in every respect deplorable. The running waters are hardly ever in what may be called a natural state.

When they are high, they are far higher than Nature ordained ; when they are low, much lower ; when they are normal, as they must needs be at some point in the process of rising or falling, they are not normal long enough. In saying this I am not thinking about what is the most convenient or promising depth when one casts for salmon or trout. The trouble is much more serious. It concerns nothing less than the question whether the subjection of the rivers and streams to abnormal fluctuations is not rendering them unfit to be haunts of the fish. Consideration of this problem will be helped by the presentment of a typical example. Salmon as well as trout are involved in it ; but that does not render it irrelevant to our theme, which is concerned with trout only. Both fish are indigenous to most of our rivers, and, as could be shown by naming some of these, there is no warrant for the belief that trout cannot thrive where salmon are.

Any one coming upon the Eden, which rises in the Lomond Hills and falls into the sea at St. Andrews, would not, in time of drought, think of it in association with salmon. The flow is not larger than that of the stream running through the golf-course at Bushey Hall Park, fifteen miles north of London. In Fife, as at Bushey, the wanderer would see a good many trout ; but he would never

dream of looking for a salmon. Now, once upon a time salmon were plentiful in the Eden. There are still resident by its banks ancients who can remember constant and splendid sport with them from the Lammas flood until the beginning of winter. These changed years are saddening. Every autumn, when heavy rains come, a few salmon still go into the stream from the North Sea; leaping over three or four weirs, they run for about fifteen miles, after which they are stopped by a weir so high as not to be made passable by even the wildest flood. These few fish are the survivors of a tribe that was once great. Year by year their number dwindles. Is it that too many of them are caught? That is not the explanation. We hear much, on many a river, about over-fishing; but I question whether it be possible to over-fish a river that has fair-play. Too many tackles continually on a water may scare the fish into refusal of invitations to rise; but that tends to preserve the stock, not towards destroying it. The explanation of the gradual decline of salmon in the Eden is quite other than a casual observer would imagine. Is it that, although in most years the fish can get up the river in autumn, in most years they cannot get down in spring. We can rely upon having floods in autumn, but not upon having them in February or March. Thus, very often, the salmon, having

spawned, cannot obey the prompting of Nature and regain the sea. There is not enough water to allow them to drop over the weirs. Perforce, then, most of them stay in the river, unclean fish, and they die. Knowledge of their unhappy presence lessens the charm of the Eden as a trout-stream. Probably, apart from preying on the trout, they do no harm ; but it is not pleasant to think of any uncleanness in a river on which you are seeking sport.

The trout also suffer from the unnatural fluctuations of the river. Long ago large ones, some of them five-pounders, were common ; but nowadays any fish over 1 lb. is so notable that it calls for special mention in the daily newspapers. The trout are still very plentiful ; but the average size of those caught is much less than it was in the days of Mr. Stewart. Here again the explanation is other than a casual observer would arrive at readily. It is not only that anglers have multiplied so greatly that many of the trout are caught before they reach 1 lb. ; it is not that, having attained the age and experience which that weight denotes, the fish are cunning enough to detect the artifice of your flies. It is that the trout do not grow so well as they used to grow. The ordinary size of the river has diminished, and the average size of the fish has fallen in proportion.

These facts are not directly in the relation of

cause and effect. It cannot be said that large rivers always hold large trout and small streams small ones. The trout in the Wey, a small stream, are on the average larger than those of the Ness, the flow of which is heavy.

Still, our facts are indirectly in the relation of cause and effect. Disturbance of the order of Nature on a river has many results that are not readily noticed. In the typical case we are considering it has deprived the trout of certain food. The Mayfly, which used to flourish on the Eden exceedingly, is now rare. Its scarcity is attributable to the change in the character of the stream. The Mayfly lays its eggs in the water. If all goes well, the eggs develop into grubs, which live and move about in the mud at the bottom of the stream, and in due time, said to be two years from the laying of the eggs, issue into the exquisite large insects that the trout and we know so well. They give joy and great sustenance to the trout, and enable the trout to confer similar favours upon ourselves. Now, what is to befall the Mayfly eggs that are laid in the shallows of a water that at one time is a raging torrent and at another little better than a common sewer?

I grieve to put the case thus shockingly; but I do it with a hopeful purpose. If the British people at large, and the Irish, can be thoroughly shocked

over the state of the rivers and streams, they will give favourable attention to the suggestion about to be submitted.

The answer to our question is that when the river is in the monstrous flood which agricultural drainage promptly produces, many Mayfly eggs and grubs are swept away; and that when it is in unseemly attenuation, refuse from mills and other deleterious matter settle slimily on the bed of the stream and suffocate those which remain. Whatever happens, the eggs of the Mayfly are prevented from coming to maturity in natural numbers. The artificial conditions of the stream have the same effect upon the eggs of many other flies, such as the March Brown, the Gravel Bed, and the Grannom. The change in the character of the stream, that is to say, has been accompanied by a serious diminution in the supply of food. It is not astonishing that the trout have been gradually assimilating to the puny fish of the mountain burn.

What has happened to the Eden has happened to rivers in all regions of the United Kingdom.

Does any class of the community benefit by the change in the character of the rivers and streams? As the country has not yet permitted measures to ensure better prices for the produce of the fields, the farmers have not benefited. They might have been

better employed in rearing, on drainless acres, snipe and partridges and wild duck. The landowners have not benefited. Rents have fallen correspondingly with the prices of corn. The people at large have not benefited. Salmon have become fewer; trout have become smaller; and many a stream, naturally a thing of beauty, has become an eyesore. Contemplate the Tyne at Newcastle, the Clyde at Glasgow, or the Liffey at Dublin. A sense besides that of the eyes will be offended.

It seems to be generally taken for granted that the Tyne, the Clyde, and the Liffey are examples of a class of rivers that in the character of sporting waters are ruined of necessity. I deny the assumption. It is refuted by the fact that the Thames, which flows through a town much larger than Newcastle and Glasgow and Dublin considered as a unit, has been purified. What can be done on the Thames can be done on any stream or river.

That is in the meantime a thought apart. It is not only, or even primarily, purification that the running waters need. It is restoration to normal conditions of flow. When that has been achieved, purification will follow almost automatically. This I will in due course endeavour to explain. At present it may be well to make clear that, although, for the purpose of concentrating attention, we have been

studying the subject by the banks of a single stream, and that a small one, we have been in no way falsifying things. The great rivers are as seriously injured as the small streams. They are violently deranged. The Tay is frequently in a state that was unknown in the days before scientific agriculture. It rises far above its banks, and the broad valleys through which it flows are as a turbulent lake. It bursts all bounds. In times when the catchment area was still unseamed by artificial channels the water soaked its way to the river gradually and kept it in reasonable amplitude for many weeks; but now the Tay is sedate and fishable two days after a flood, and by the end of a week it was low. During the same period all the great rivers, if the storm has been general, are in similar plight. Speyside is converted into a chain of lakes; and there is a continuous lagoon all the way from Balquhiddy, where the naturally gentle Teith had its source, to the turbid estuary of the Forth at Stirling. Deeside is slightly exceptional. It is, I understand, believed that, there being no agricultural drainage at or above Balmoral, the Dee is not affected as other rivers are. Is there not an oversight in this content? Below Balmoral the whole valley of the Dee is drained just as other valleys are; rains and melted snows are rushed off just as quickly. What does it

matter that the upper reaches of the Dee are normal when the reaches below are abnormal? At all times there is a natural flow at and above Balmoral; but that is not sufficient. Every stream grows larger, receiving other streams, as it progresses; and, as regards fish, the stretches near the source, howsoever little tampered with they may be, are injuriously affected by any tampering below. For example, if the Dee be too small at Banchory when the run of grilse is due, the Dee at Balmoral and beyond will derive no benefit from being normal.

This argument from the Dee is of much more than local interest. A river is a very peculiar thing. The conditions that are necessary to the life within it are such that, pondering them, one is almost obliged to doubt whether separate properties in running water were in the design of Nature. Injure a river at any point of its course, and you shall injure it from source to sea. Sufficiently pollute it in the head-waters, and it will be without fish everywhere. Sufficiently use nets at the mouth, and the stock of migratory fish, salmon and sea-trout, will be wholly destroyed within three years or so. It is manifest that, from the unchangeable facts of the case, a river that is in parts owned by several persons calls for an exceptional law. If the several proprietors cannot agree upon a policy accurately calculated to maintain

its natural value, the river should be taken over by the Crown or by the State, which would, on sound conditions, let the rights of fishing. As some of the several properties are without sanction from charter-grants, that, in some cases, would be merely a process of restitution.

Rivers are peculiar things in public respects as well as in private respects. Either they are well-treated by all classes of the residents in their neighbourhood, or they are ill-treated by some of the classes and neglected by the others. In connexion with *Salmon Fishing* I had occasion to make close inquiry as to the states of the more considerable waters in the United Kingdom. The results are various ; but they can be summed up in a general statement. In the few cases where a river is the undivided property of a single person the stock, whether it be of salmon or of trout, or of both, is well maintained ; and in practically all cases where a river is the subject of divided interest the stock has been going down. The immediate causes of decline, as I have mentioned, are various. Pollution, by sewage and the refuse of mines and factories, is common to many streams in England ; in Ireland certain rivers are poisoned by flax-water or by spurge, while poachers are aggressive in all parts ; in Scotland until about four years ago, when Parliament decreed

a close-time, many thousands of trout were annually killed out of season ; and all over the kingdom there is too much netting in the estuaries or just beyond. These evils are in direct consequence to the establishment of agricultural drainage. That modified the character of the running waters so much that gradually, half-unconsciously, people of all classes came to regard the rivers and streams as practically doomed. Did a riparian owner on an estuary learn that hardly any of the salmon that ran up to spawn ever came down again ? What was the use of trying to preserve a water of that kind ? Why not net and sell as many of the fish that came into the estuary as the liberal law allowed ? Thus he argued, and thus he acted. Then persons of poaching instincts, seeing with what little respect an owner himself treated the river, felt encouraged towards sport while still there was any to be found. It was open to the upper owners to institute hatcheries, from which to maintain the stock ; but, these owners reasoned, what encouragement had they to do that while the fellow near the sea would net in the grilse stage nearly all the salmon they might turn down as smolts ? In this inexorable way, what was the business of so many persons became the business of nobody in particular. There were, as there still are, Acts of Parliament capable, if enforced, of dealing

effectively with pollution and every other evil to which rivers are subject, such as the building of weirs unprovided with proper fish-passes, or the abstraction of water through mill-leads, or the taking of supplies by municipalities that do not arrange "compensation" overflows; but wherever a river was a much-divided property the interests concerned could not be reconciled, and the water, in many a case, was allowed to go from bad to worse.

Is it not time that the rivers and the streams had a more effective attention than the proprietors as a rule have been able to give? Very many persons, especially in England, think so. A gratifying outcome of the investigation to which I have referred is the discovery of an earnest and spreading public sense of the desirability that the injurious influences, not one of which is in the interest of a single person or of a single class, should be arrested. Already, within recent years, working through invigorated Boards of Conservators or through newly-formed Angling Associations, this sense has made itself felt in parts of England; Scotland, in which there are many waters open to all-comers, is taking heed; and it is said that the streams of Ireland would be speedily regenerate if only the Lords Lieutenant would refrain from temptation to

cancel the sentences which Magistrates impose upon breakers of the law. In short, there is everywhere a distinct revival of interest in the waters.

It is, therefore, with considerable hope that I endeavour to make generally known a simple means by which the whole complicated trouble may be successfully attacked at the roots. The running waters can be restored to something like a natural state without abolition of the agricultural drainage that disorganised them. The experiment has been made, and has proved completely successful. A full account is given in *Salmon Fishing*. The subject is the Helmsdale, a salmon-river belonging to the Duke of Sutherland. In common with practically all other running waters, it had ceased to yield sport so amply as in days of old. Indeed, for the greater part of the season it yielded no sport at all. That was because during the comparatively dry months the water was too small to entice the fish from the sea. The tenants of the river, of whom there are six, perceived that if the loch out of which the river flows were raised a few feet there would always be a reserve of water against times of drought. They had a dam built at the outlet of the loch; it added six feet to the depth of the still water; 3,300,000,000 extra gallons were stored at the source of the river. This vast quantity is in reserve

for the time of need. Whenever the flow over the dam shows signs of being too small the sluices are manipulated, and the river becomes normal. Salmon now run up exactly at the times when instinct prompts, and all through the season sport is as good as it ever was.

The storage system, which has proved an unqualified success in Sutherland, could be applied to any river or stream in the United Kingdom. It is in process of being applied to at least half a dozen waters. It is not costly. Only £700 were spent on the works in the Far North. Elsewhere, to be sure, there is many a river or stream that has not a lake as its source, and in such a case a lake would have to be formed. It may at first be thought that in some places the land to be impounded would be costly; but nearly everywhere, I think, that difficulty would disappear on examination. Land suitable for the purpose of storage will generally be found to be land that, already liable to flooding, is of little value for any use to which at present it can be put.

All this is to say that there is not a single salmon-river or trout-stream that could not be restored to natural and equable flow within a very short time. Revival of the fish would follow speedily. Whenever they have a fair chance salmon and trout multiply as if by magic. Hatcheries are

not needed then. It becomes a general interest to prevent pollution and to suppress poaching. A river that is in a state of nature protects itself. Any one who doubts the assertion is invited to reflect on the illuminating fact that, whilst sport on most of our running waters has been falling off for many years, the still waters have not suffered similarly. Being dependent as regards stock on rivers flowing out of them, certain salmon-lakes have had adversity; but there does not seem to be a single trout-lake which is not now as good as it was of old. The explanation, I think, is that, although, in common with rivers and streams, lakes, their watersheds being drained, now rise, in time of rain or melting snow, to abnormal levels, they never fall below the normal minimum. About a water that is equable, or never unnaturally attenuate, there is something that exacts the instinctive respect of men.

It is possible, then, that all the well-known rivers will ere long be restored to something like their natural states, and that their game fish will again be as abundant and as large as they ever were. Indeed, the outlook for anglers generally is even of a wider brightness than that possibility discloses. Fish-culture, which in the United Kingdom is an industry comparatively new, is a supply that

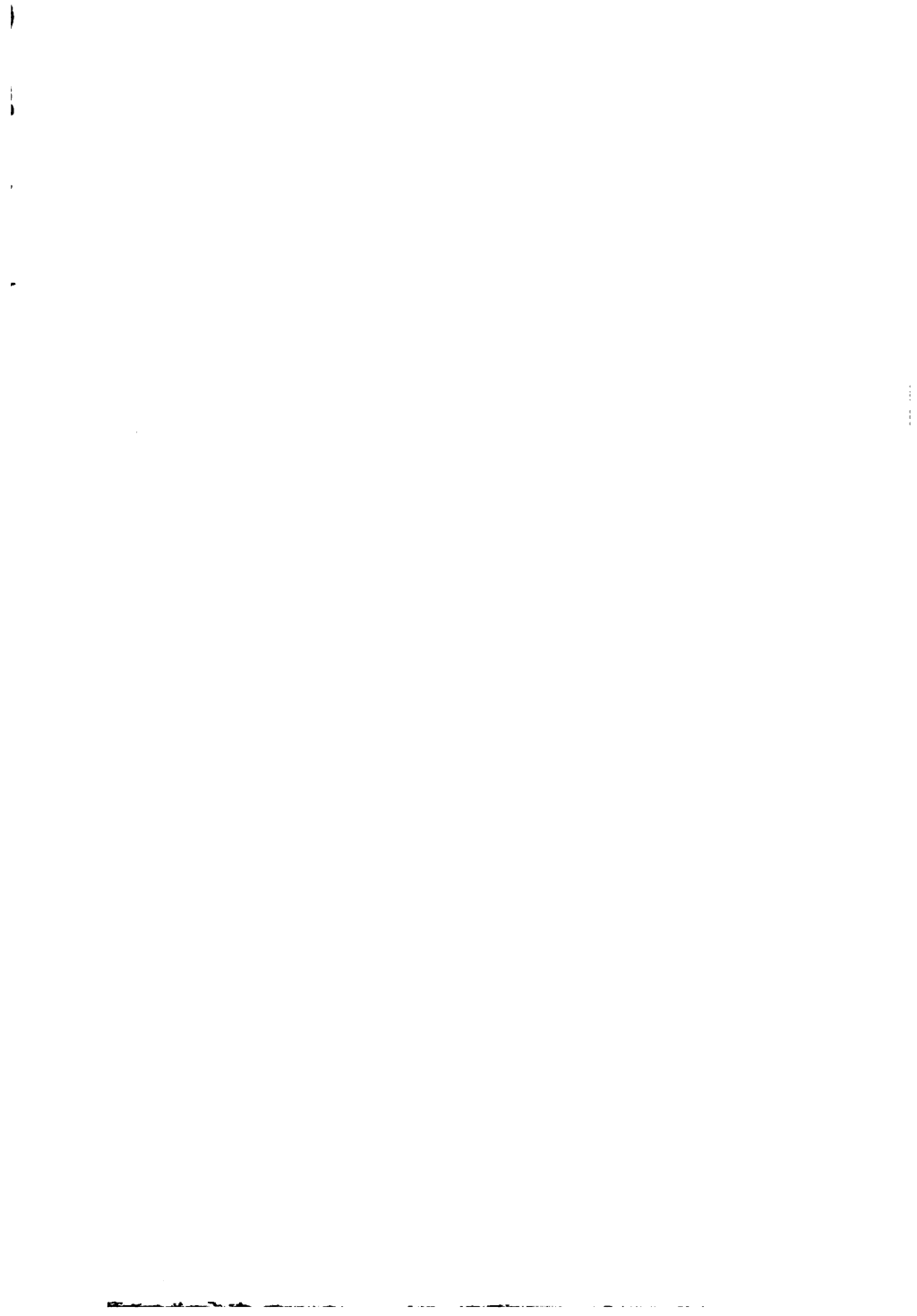
creates a demand. Young fish or eggs for stocking, which cost remarkably little, are readily to be obtained, and it is being realised that many a neglected little stream is capable, if freed from pollution and deepened here and there, of becoming the home of thriving trout. Edinburgh has witnessed the restoration of the trout in such a stream within its bounds, and in a private lakelet at the very heart of London lusty rainbows rise at the artificial fly. There are many other cases ; but these are so encouraging that they suffice to illustrate what can be done even where civilisation presses most harshly upon Nature. It is difficult to think of any lowland neighbourhood which does not have at least one redeemable rivulet.

Besides, there are in this country streams which, imperfectly known even to the persons through whose neighbourhoods they flow, are not known to the public at all. These are hill-streams. Though shown on charts of estates, they are not marked in any map in general use, and thus their number cannot be more than roughly guessed at ; but even a casual acquaintance with the hilly regions, such as Wales and the Highlands of Scotland, warrants the belief that there must be many hundreds. *The Spectator*, supporting certain suggestions about them presented in *The Times*, estimates that "every half-



ON A MOUNTAIN STREAM.

A good pool, from 3 to 4 feet deep near opposite bank. From a photograph by Mr. J. C. Cameron.



mile of strath adds some hill-born tributary to the river." An angler on any of these streams is almost as unusual as a heron. That is because the hill-streams, the trout in which are small, are tributaries of great or considerable rivers in which the trout are large. Sportsmen resident in the neighbourhoods, being used to comparatively weighty game, deem the brook trout not worth taking. Who that is used to fish ranging between half a pound and two pounds, with the possibility of one large enough to be kept in a glass case, would care to fill his creel with two-ounce trout?

That is the local line of reasoning. It will astonish the thousands of anglers in large towns who on Sundays and at other times of leisure cheerfully go long journeys in the hope of catching a roach or two. These will think that six dozen trout, however small, are worth untold tallies of winter fish. Six dozen, it may be mentioned from experience, is an ordinary basket for a favourable day on a hill-stream. It is well, also, to emphasise the fact that the average weight of the trout is not more than which has been mentioned. We shall be enabled to adjudge the potentialities of the hill-streams by clearly understanding the actualities. The trout are small, and, though they have an habitual preference for the fly of the season, which is sometimes

the fly of an hour, they are ravenous enough to be caught by anglers of little skill.

No one seems to have thought of attempting to develop these fisheries. It may be that the hill-streams are neglected simply because it has not been perceived that anything could be made of them. They are regarded merely as haunts of innumerable little trout of no importance, and it is assumed that they must always remain as they are.

The truth is that they could be converted into waters of a peculiarly attractive kind. It is a mistake to take it for granted that the mountain trout are a breed of natural dwarfs. The fact that they do not become large in the streams as they are is no reason for thinking that they would remain small in the streams as they might be. We have already striking proof that they are stunted only because of the nature of their environment. It is well known that they remain vigorous and become very large when there is formed among the hills a lake from which some town is to draw a supply of water. It is known also, though less widely, that the progeny of mountain trout mated with trout of the plains, such as those of Hampshire, far from showing any tendency to dwarfishness, are an excellent sporting breed. All that the hill trout want in their native waters is more room and ampler feeding.

Both these needs could be met without much difficulty.

Before endeavouring to show how, I had better mention that a "mountain stream" is not what the words seem to signify. It does not begin on some bleak summit lofty enough to be frequently hidden by the clouds. It is neither a continuous waterfall nor a series of waterfalls. It is not a stream that can be comfortably tracked to its source only by the sturdy climber. It is less on the mountains than between them. To walk up by its banks is easy. The declivity of the course is slight. Hardly ever is it more than a thousand feet, and that, spread over five miles, the average length of such a stream, is not much. It is thought nothing to speak of by the grouse-shooter, who at the beginning of the season usually finds most of his birds in the heather bordering the burn.

The declivity, however, is sufficient to render the water unfit to be such as that in which trout can thrive. Pools are not very many, and never very large; at most places the stream is rapid and shallow. That is why the trout are small. They spawn in the quickly-running shallows, and are to be found there, at other than the spawning time, when there is a slight flood; but throughout spring and summer most of them are in the pools when the

stream is low, and also when it is more than slightly flooded. Thus, the pools have to provide food for all the fish in the water. Rather, perhaps, it should be said that much of the food which would be found in the shallow rapids is wasted. The food consists mainly of aquatic insects. Some of the flies born in the shallows find their way to the places where the trout are gathered; but most of them flutter about, breed, and die on the parts of the stream which the trout have quitted. That is to say, the mountain stream does afford much food; but, as the trout are not distributed equally throughout its course, only a part of the food is utilised, and that part, instead of having to provide for a proportionately small part of the stock of fish, has to serve for the whole stock.

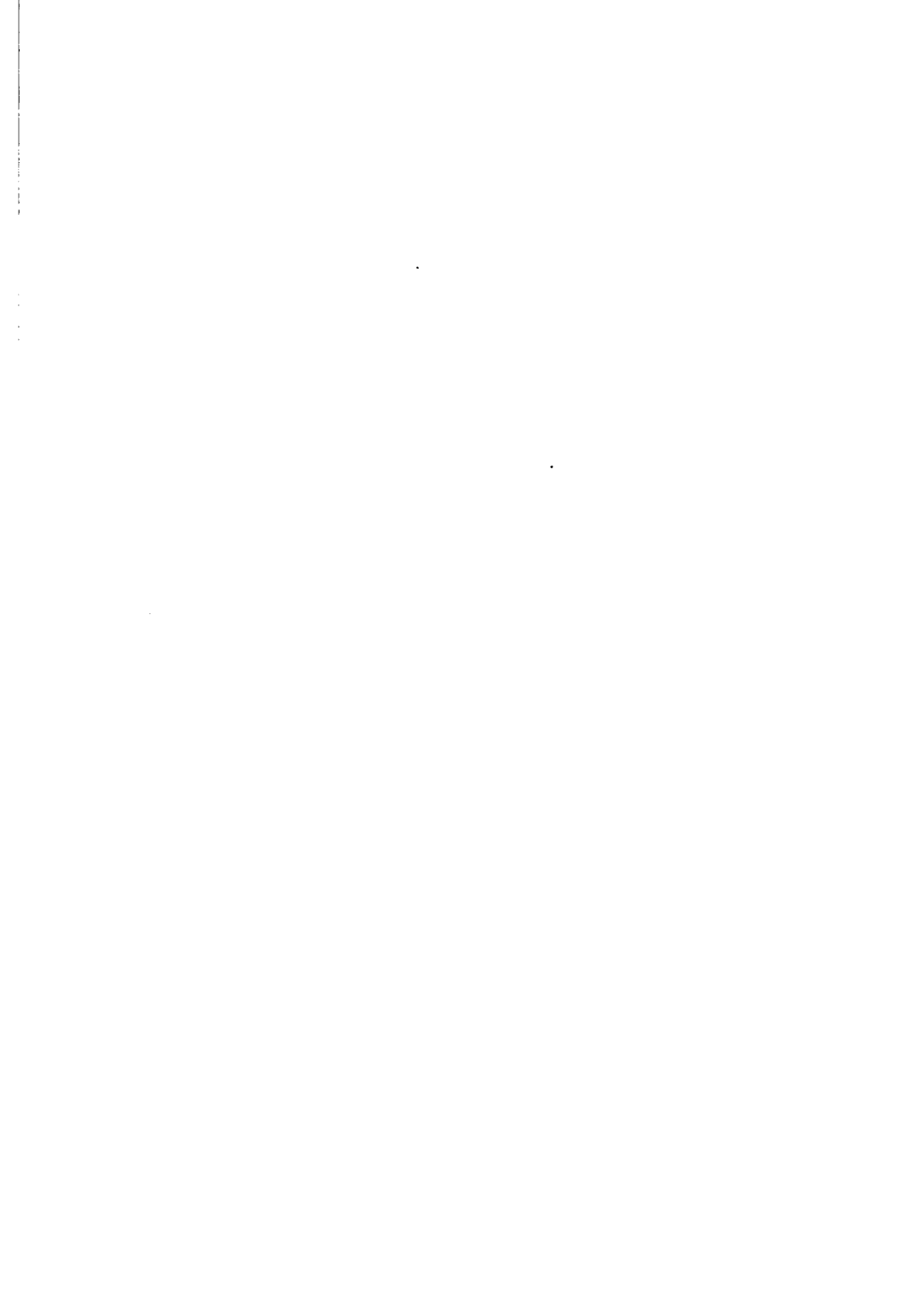
Obviously, then, the remedy is a structural reform of the stream such as would make practically the whole of the water deep enough to be frequented by trout in spring, summer, and September.

A series of dams is necessary. Any one who surveys a mountain stream will readily understand that a great improvement would come about if the water in the long shallows were impeded. At présent in such places there is only a trout here and there, where, over some depression in the bed of the brook, or in the lee of a large stone, there is water



ON A MOUNTAIN STREAM.

A shallow stretch which should be dammed. From a photograph by Mr. J. C. Cameron.



deep enough to be the hover of a fish; but these waste tracts would become fruitful if the stream were dealt with as has been suggested. The dams could be readily built. It has been found that bags of sand in layers fixed by a covering of concrete form a wall strong enough to withstand the heaviest flood.

It must be borne in mind that the fish, which seek higher reaches when about to spawn, should have a free run; but the dams need not be obstacles. Instead of being allowed to flow directly over them, the water could be made to run round. At any place where the declivity would be too great, the stream could be diverted and made circuitous. By this means, indeed, natural falls in the streams as they are at present, not a few of which are high enough to keep the trout below at all times, could be neutralised.

It will be said that these changes would be interference with the order of nature; but that objection will not stand scrutiny. The changes would not be more than interferences with the accidental order of nature, the haphazard mechanism. There would be no interference with the essential order. They would improve the essential order. It is because the actual state of the water-courses is a wrong environment that the mountain trout are small. Scientific reform of the environment

would speedily bring about their natural growth. Those who on all occasions decry "interference with the order of nature" feel their thoughts to be founded on a bedrock of truth in philosophy; but, as has been pointed out in another chapter, they ruminate in disregard of certain highly relevant considerations. The strawberries and the grapes they eat would not have been large had these fruits been left to the care of Nature unassisted. The pheasants they shoot would not have been available had Nature alone been responsible for the birds of Britain. A deer-forest is in a certain sense an interference with the order of nature, and an arable farm is very much so. These thoughts should suffice to indicate that any hesitation as to the proposal about the neglected trout-streams is due only to the accident of our being generally unfamiliar with the fact that fish are as readily susceptible of cultivation as fowl are, or flowers.

A question more specific arises. Do the mountain waters produce the food which the trout, if they are to grow large, require? They seem to. It is true that in certain waters high in the uplands the fish are lanky and light; but that is because these far-off tarns are hardly ever visited by anglers. Not having been kept down in numbers as the trout in more easily accessible waters constantly are, the stock has

grown out of natural proportion to the supply of food ; that is why the fish lack plumpness. On the other hand, in certain other upland lakes, at least a thousand feet above the level of the sea, waters which are not infrequently fished, the trout thrive splendidly. Aquatic flies come out on the hills later than they do in the valleys ; but they are very abundant, and experiments in fish-culture establishments give reason for believing that other food, such as fresh-water shrimps, can be successfully transplanted.

In short, the hill-streams put right would be exceedingly pleasant resorts. The trout would not be less large than the average trout of the lowlands, and they would be, as they already are, gamier. The streams would not be afflicted by the pike, which does not take readily to lively waters ; and most of them would be, as they now are, absolutely free from pollution.

Since beginning this book we have on several occasions gone to the mountains. Now, at the close, we are there again. That is fortunate. It is on the plains that we spend most of our hours, either those of sport or those of work and thought ; but it is on the mountains, sometimes, that the truth of things is most readily accessible. If the atmosphere is clear and calm, your mind, when you

are there, becomes conscious of a fresh trust in itself. In particular, as regards our own theme, the balance-of-nature question, which has asserted itself more than once, loses mystery. Cast your flies into the tarn. Instantly you hook a trout. It should be plump, and bright, and 1 lb.; but it is lank, and dark, and 3 oz. All the fish in the tarn are similar. They are weaklings, degenerates, failures. Can Nature have intended them to be as they are? At first, assuming that they are "in a state of nature," one feels obliged to believe that Nature did have that intention; but on second thoughts another possibility suggests itself. We may be in error as to our assumption. It may be that the "state of nature" is not what the phrase seems to mean. Perhaps man, though himself part of nature, is also a partner of Nature, an ally whose reasoned co-operation is indispensable in the fulfilment of the design of life upon the earth. At any rate, it is obvious that in some affairs Nature when left alone does not work towards success. If man had been in reasonable measure reaping the fruits of our tarn, taking some of the fish from time to time, the stock would have been in good condition. It is in poor condition because it has been neglected. Nature, it would seem, has in certain affairs no instrument other than man by means of which to make good her incapacities.

That, I think, must be one of the meanings of the Scriptural statement that man has dominion over general life. Dominion is not rule only. It is responsibility also. The responsibility obliges us to perceive that in the affairs of wild life, as in the economics of civilisation, the Let-things-alone policy is based upon a misconception of the "state of nature" and radically fallacious.

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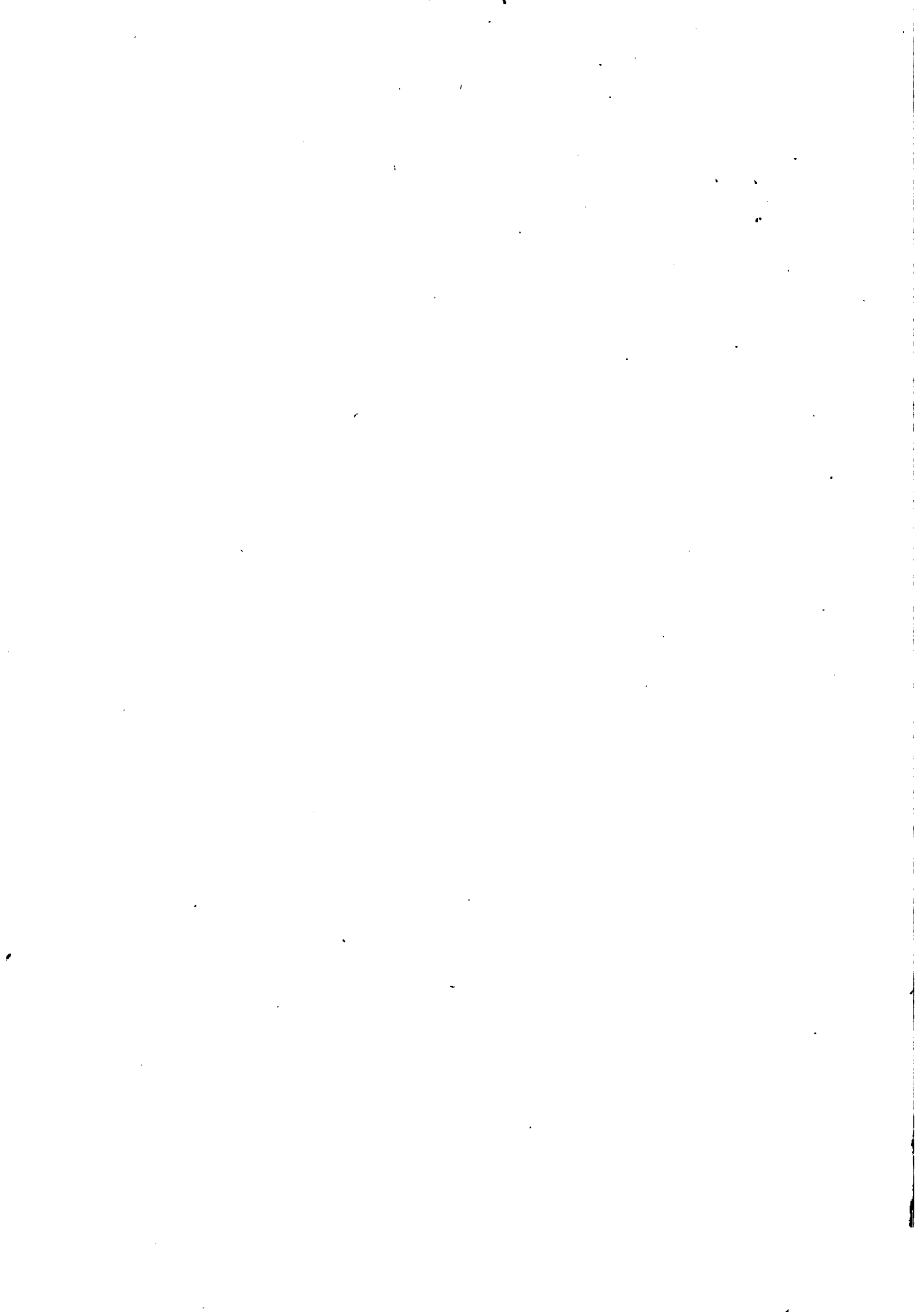
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